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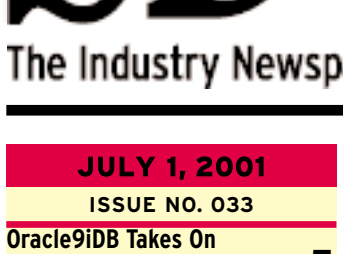

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APPLE JOINS MAINSTREAM WITH WEBOBJECTS 5 SERVER

All-Java application platform not just for Mac

BY EDWARD J. CORREIA

With the release of WebObjects 5.0, Apple Computer Inc. has thrown its hat into the ring of mainstream Web application servers.

According to Ernie Prabhakar, Apple's product line manager for development platforms, what differentiates the Apple platform from the field is its ability to create true three-tiered Web applications. "Hardly anybody is doing that yet. What they are doing is taking servlets and JSP and stretching them as far as they can," he said, adding that such a methodology is fine for creating "quick and dirty" Web sites, but the method leaves administrators with maintenance and scalability problems.

Apple's method, Prabhakar said, is to automate most of the "grunt work" involved in setting up a dynamic Web site. "We use a model-based approach to create a scalable three-tier Web application in all Java, including database access and page generation, without writing any code to start with," he said, adding that once the framework is in place, a Java programmer can then simply add business logic to create any necessary additional functionality required.

▸ continued on page 30

HP Adopts Java Services Framework

BY ALAN ZEICHICK

SAN FRANCISCO — In the wake of its acquisition of Bluestone Software Inc. last January, Hewlett-Packard Co. claimed to be turning into a Java-centric software company. With a series of announcements at Sun's JavaOne conference last month, the financially troubled Silicon Valley pioneer continued to press that point home.

The central point of HP's new software offerings is what it calls its Core Services Framework, a reference implementation of the Java Community Process' Java Services Framework. According to John Capobianco, general manager of HP Bluestone, the company's middleware division, the framework supports Java application service interoperability, as well as simplifying component reuse. According to Capobianco, the framework was to be available at

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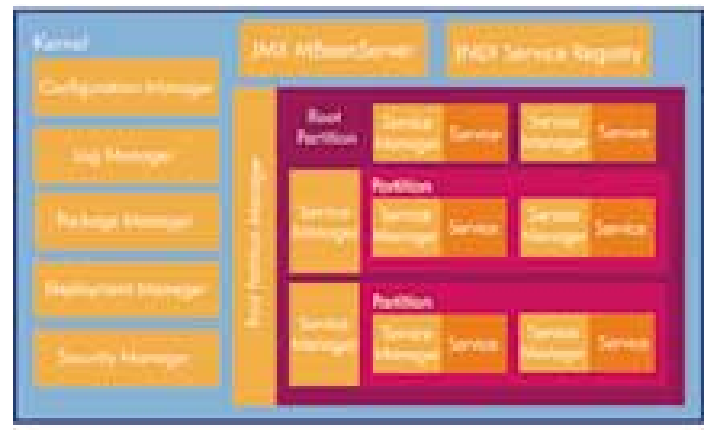

HP Bluestone's Core Services Framework defines a standard set of kernel and application services for Java developers.

Sun Stays the Course at JavaOne

Conference marked by celebration of J2EE and J2ME

BY ALAN ZEICHICK

SAN FRANCISCO — Anyone attending the JavaOne conference in early June would have expected it to be a platform for major new software initiatives from Sun Microsystems Inc.—and would have been disappointed. Although Sun did have some news to announce at the show, there was no showstopper: no Java 3, no early completion of Java 2 Enterprise Edition 1.3 (currently in beta), no progress on the much-awaited Enterprise JavaBeans 2.0 specification.

At JavaOne, Sun's product and technology announcements were focused on its Forte tools, Project JXTA, iPlanet server software and a strengthened focus on the telecommunications market.

FOR MORE ON JavaOne
SEE PAGES 11, 14, 33

Rather than promoting a slew of new Java-oriented products, the message of the show was momentum and traction: Sun executives gushed over the fact that Sun now has 21 J2EE certified licensees and has had more than a million J2EE SDK downloads—a considerable accomplishment given the short time that the platform has been available—and that many wireless devices running the J2ME client, in particular JVM-equipped telephones, were on display on the exhibit floor.

Forte for Java 3.0 includes a graphical wireless-device emulator for testing J2ME applications on a variety of simulated target platforms.

The third release of Sun's **Forte for Java** integrated development environment entered a public beta stage during the show—or, as the company puts it, version 3.0 is "available under an Early Access Program" at www.sun.com/forte. According to Stans Kleijnen, vice president for Forte Tools, the final version should be available in August.

With this new release, Forte for Java forks into two editions: a continuation of the original Community edition, freely available as open-source software and designed to work with Java 2 Standard Edition; and a Forte for Java Enterprise Edition,

▸ continued on page 12

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Oracle9iDB Takes on IBM's DB2 EEE

Ellison touts 'real application clusters,' moves to flat per-processor pricing

BY ALAN ZEICHICK

REDWOOD SHORES, CALIF. — Oracle Corp. rolled out its long-awaited Oracle9iDB database on June 14, citing improved clustering as its greatest new benefit, and making pointed jabs at its competitors, primarily IBM Corp.'s DB2 Enterprise Extended Edition database, as having a cluster design that just doesn't work. The company also abandoned its controversial "universal power unit" pricing scheme, switching to a flat per-microprocessor pricing model.

During his 90-minute presentation, Oracle chairman Larry Ellison spent as much time cheerfully bashing the Unix and Windows versions of DB2 EEE, particularly its "shared nothing" clustering architecture, as touting Oracle9iDB's "shared disk" design as being good for so-called "real application clusters."

The "shared nothing" architecture, also used by Microsoft's SQL Server, partitions a large database between multiple servers in such a way that each server has its own smaller database. In theory, the benefit is that performance can scale, though Ellison claims that IBM's clusters get slower, not faster, as customers add more servers to a DB2 EEE cluster.

The downside of the "shared-nothing" model, according to Oracle, is that the software must be written to understand that the database is partitioned and how it is partitioned. And because each database owns a unique part of the data, if one server in the cluster goes down, the entire database is offline, so that a "shared nothing" cluster is less fault-tolerant than a single-server database.

The alternative "shared disk" design, used by Oracle9iDB and IBM's DB2 for mainframes, maintains a single copy of the data stored externally, typically on a storage-area network. Multiple database servers, each running the same application, can each read and write the full database—and in fact, other than synchronizing record locks as a background task, they are unaware that the data is running on parallel servers. The benefit, claimed Ellison, is that the system is fault tolerant: If a server goes down, performance falls, but the application keeps running. "We can make Windows 2000 more reliable than a mainframe [using clustering]," he boasted. Plus, he added, existing Oracle8i applications need not be rewritten to exploit Oracle9iDB clusters, and servers can be added or deleted from the cluster without repartitioning data or restarting the servers.

US VS. THEM

Ellison had strong words about DB2 EEE on Unix/Windows, claiming that IBM's clustering technology simply doesn't work, except for specially written applications like the widely quoted TPC-C benchmark. "It is utterly useless for anything other than benchmarks," he said, adding that popular database applications from PeopleSoft, SAP and Siebel won't run on IBM's clusters, but that they will on Oracle9iDB clusters without modification.

As a proof point, he claimed that not only does IBM not have a single customer who runs DB2 EEE in a cluster, but that IBM never has released application benchmarks—such as of standard packages from PeopleSoft or SAP—running on its clusters. "They just don't work," Ellison exclaimed repeatedly during the product launch.

Jeff Jones, director of marketing for IBM's Data Management Solutions business unit, said that DB2 EEE clusters work, but he couldn't refute Ellison's other claims. "We are not incented to post apples-to-apples database comparisons against other database vendors who run on our hardware," he claimed, trying to explain why IBM won't publish cluster benchmarks except those using a modified version of the TPC-C test suite. "The only [other benchmark] we've got to show is of PeopleSoft running on an SMP configuration on a single server using virtual clusters."

Jones also acknowledged that he didn't know of any customers using Unix/Windows DB2 clusters in a production environment, but said that he didn't keep track of the application vendors' customers. However, he did say, "PeopleSoft is running [on DB2 EEE clusters] today, and SAP and Siebel are looking into it."

Ellison also unveiled new flat per-microprocessor pricing for Oracle9iDB at $15,000 for the standard edition, or $40,000 per CPU for the enterprise edition, which supports data mining. Only after the launch did the company reveal that clustering brings the price up to $60,000 per processor: Oracle software for a cluster of four quad-processor servers would cost $960,000. That's three times the price of DB2 EEE for Unix/Windows. Ellison claimed that improved reliability—and lack of need to maintain hot spares—reduces the TCO.

Will IBM go the same route as Oracle? Not likely, insisted Jones. "We're happy with the SMP scaling of DB2," he said, "and Oracle needs to show that 'real application clusters' are more than Larryware." ▮

Oracle9iAS Gets J2EE, SOAP, Implements New ESI Protocol

Oracle Corp. has finally dipped its toes into the high-end Java market with a J2EE-compliant update of its Oracle9iAS application server. Available now, the new version, according to John Magee, senior director of marketing for the product, not only has passed Sun's compliance tests, but also adds new protocol support to the app server.

According to Magee, Oracle9iAS 1.0.2.2—which he characterized as a major upgrade despite its relatively minor version-number increment—includes new features for modeling an application's workflow paths and to implement business processes.

As with most J2EE app server vendors, Oracle is working to support Web services; the new version not only supports SOAP 1.1, but also includes an integration server that can route XML messages within an application and between trading partners, said Magee.

The hottest new feature, other than the J2EE certification, is support for a new protocol called ESI, or Edge Side Includes. ESI was jointly developed and announced by Oracle and content-delivery software maker Akamai Technologies Inc. last April, and provides a simple markup language that content developers can use to flag specific portions of a Web page as being dynamically cachable, or as being noncachable because the page may be based on personalized information.

By explicitly delineating cachable and noncachable content, said Magee, more of a dynamic page request can be satisfied without placing a burden on the application server. According to Oracle's own tests, ESI allows a Web server to handle 85 times as many users on the same hardware.

Magee claimed that although Oracle9iAS is the first application server to use ESI, the specifications for the markup format have been published and the company is planning to submit it to an external organization for standardization. However, it was unclear whether it would go to the World Wide Web Consortium or to the Java Community Process.

The application server is available for free download by developers from Oracle's developer site. The deployment fee is $20,000 per microprocessor; with the Oracle9i product family, Oracle is abandoning its traditional power-unit pricing model, and adopting a per-processor, per-server scheme.

–Alan Zeichick

MICROSOFT UPDATES .NET FRAMEWORK

Second beta provided at Tech-Ed conference in June

BY ALAN ZEICHICK

Microsoft Corp. chairman Bill Gates unveiled the second beta of the .NET Framework at the company's Tech-Ed conference in mid-June. The .NET Framework is the collection of components required to implement Microsoft's vision of Web services, and includes the Windows Common Language Runtime, class libraries and other components.

A key new feature is that this beta allows applications to interact with the Universal Description, Discovery and Integration project. "We've brought functional integration within Visual Studio.NET to go to UDDI to find and use a Web service, or to post a Web service," said Barry Goffe, a .NET product manager.

For the first time, he added, Microsoft will allow all developers to deploy applications based on beta code; previously, the beta code's license agreement had prohibited production use of applications based on pre-release software, he said. Approximately 300 preferred customers, however, already have been allowed to deploy applications that use the beta framework, through Microsoft's early experience program, and the company is now making that available to the wider community. "We feel confident with the quality of the platform and how far we've come with the second beta," said Goffe, who added that this beta is not guaranteed to be feature-locked. The software is still on track to be released in the second half of the year, he said.

Microsoft also unveiled the second beta of Visual Studio.NET at Tech-Ed, and announced that it has shipped the Mobile Information Server, which Goffe called the last of the .NET servers to be delivered to customers. ▮

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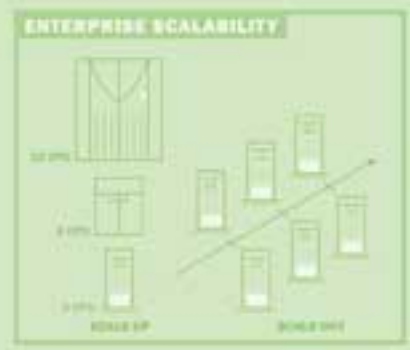

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Microsoft Embraces, Extends SOAP

Three new specifications push .NET-based Web services with XLANG, DIME

BY ALAN ZEICHICK

Continuing to split its efforts between standards-based software development and its traditional path of releasing home-grown extensions, Microsoft Corp. has published three new specifications that embrace and extend XML, SOAP (Simple Object Access Protocol) and WSDL (Web Services Description Language).

The three specifications, available on Microsoft's GoDotNet developer site at www.gotdotnet.com/team/xml_wsspecs/default.aspx, are the SOAP Routing Protocol, the details of the XLANG XML business process language used by the company's BizTalk Server, and Direct Internet Message Encapsulation.

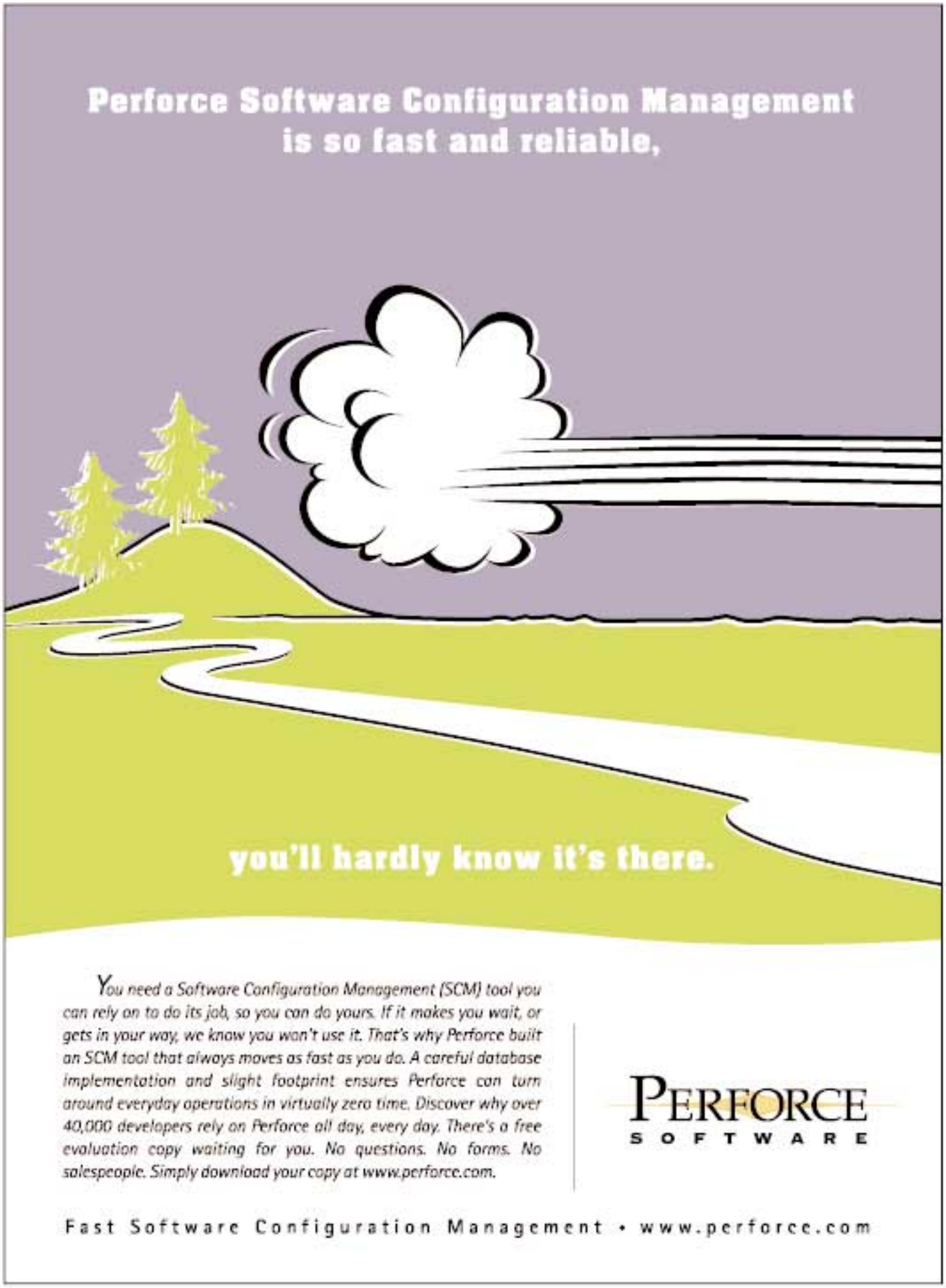
Normally, SOAP is a one-way path for sending information from one system or service to another. The SOAP Routing Protocol, or SOAP-RP, according to the specification, provides a reverse message path enabling two-way message exchange patterns such as request/response, peer-to-peer conversations, and the return of message acknowledgements and faults.

Unlike SOAP, which does not define an actual message path along which a message must travel, SOAP-RP describes a entire message path; according to the document, that means that SOAP-RP messages can travel directly over a Layer 4 protocol such as TCP or UDP. By contrast, SOAP requires a Layer 5 session protocol such as HTTP to help it traverse a network.

Microsoft's XLANG is the business-process language within the company's BizTalk server, which provides a notation for the specification of message-exchange behavior between Web services. The language's service description is an extension of the WSDL service description, adding an element that describes the behavior of a Web service as a part of a business process, according to the company. The newly published version is described by Microsoft as an initial public draft release.

The Direct Internet Message Encapsulation, or DIME, is another extension to SOAP, which provides a mechanism, similar to the MIME (Multipurpose Internet Mail Extensions), for attaching arbitrary types of binary data to an XML message. When used with SOAP-RP, it provides the Layer 5-type encapsulation needed to transport messages directly, without using HTTP. According to the specification, DIME adds three new pieces of data to the message headers: the complete length of the record, the type of data included in the message, and an optional globally unique payload identifier based on its URI (Uniform Resource Identifier), so that a pointer to the binary data, rather than the data itself, can be transmitted via SOAP and SOAP-RP.

Microsoft has not indicated whether it will submit SOAP-RP, XLANG or DIME to the W3C or other standards organizations. ■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Rhythmyx Gets Content Editor Engine

BY DOUGLAS FINLAY

Percussion Software Inc. has achieved its long-term goal of substantially reducing the time to deploy content with the release of a significant upgrade to its Rhythmyx Content Manager for XML, version 3.5, that includes a new content editor engine that eliminates the need for Java code when building content editors.

"The content editor engine is a new component to the development environment that builds content editors and cuts by one-half the time it takes to deploy content," said Debra Murphy, Percussion's (www.percussion.com) director of business development. She said that in 3.0 and earlier versions, developers had to code in Java in order to build content editors for assembly of material, for workflow management and for publishing to the Web. Now, she contended, the content editor engine can build content editors automatically.

The enhanced editor engine now offers revision support, down to the content level. "To help performance levels, revision support provides for more granularity, so that entire Web sites don't have to be republished when only individual content items have to be changed on the Web site," she said. Another new feature is enhanced versioning, in which different versions of documents can now be processed simultaneously through the workflow program to choose the best version for publishing.

Rhythmyx 3.5 also can highlight information deemed invalid on forms and documents on the Web, so that users can see and correct the content more quickly.

Rhythmyx Content Manager starts at $175,000. ■

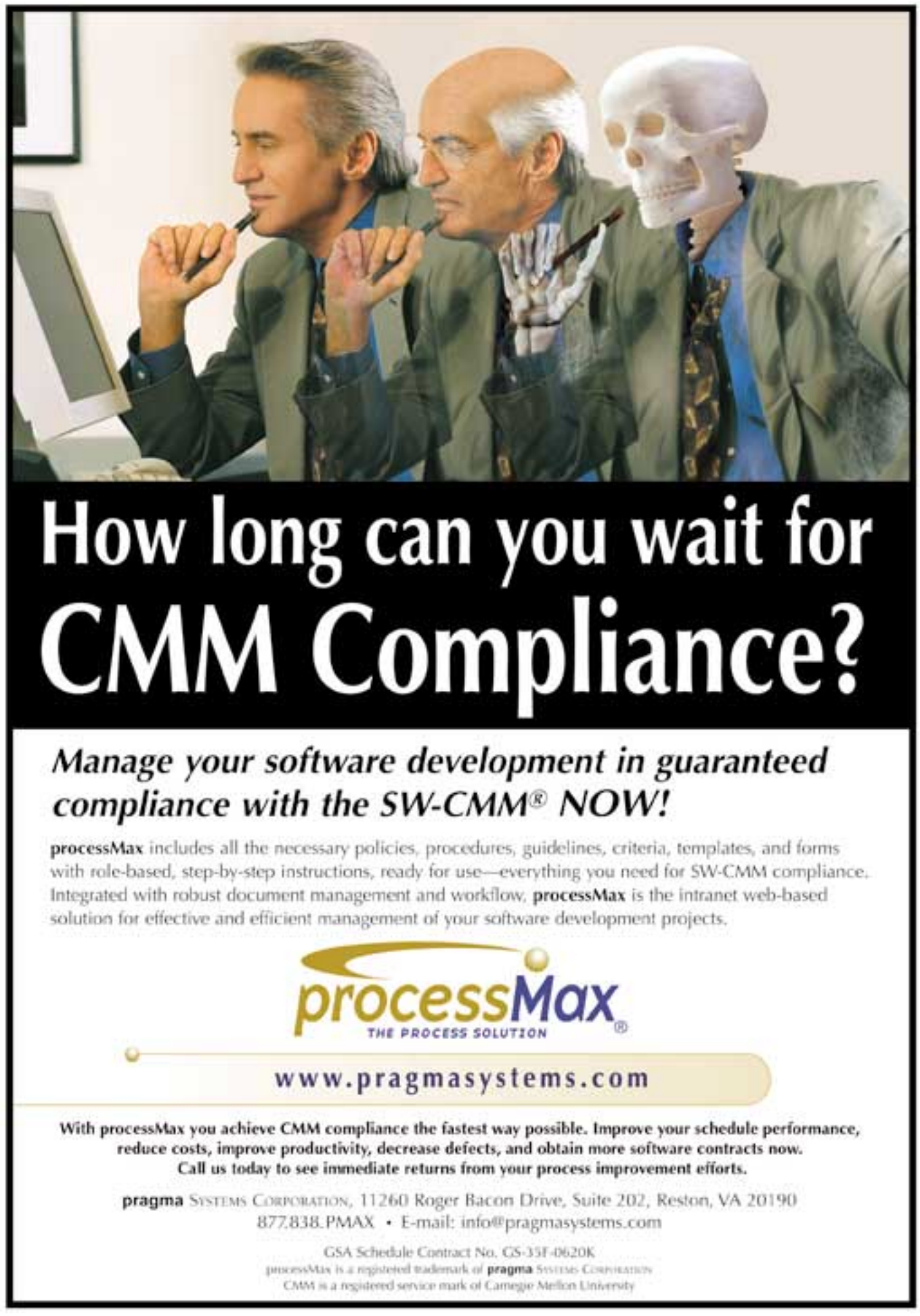
W3C CLEARS XHTML 1.1

BY DOUGLAS FINLAY

The W3C's XHTML 1.1 Recommendation addresses the specifics of delivering clean content to a device separate from its presentation elements, thereby eliminating needless code to more precisely control a Web page's appearance. In addition, the Ruby Annotation Recommendation, also released last month, enables content developers to add annotations to content that provide meaning to the text, rather than simply acting as layout features.

"As we move toward delivering content to multiple devices, which is what XHTML is about, we have to be clear about separating the presentation from the content," explained Janet Daly, W3C spokeswoman. She said the final release of the XHTML 1.1 standard recommendation does just that, by using the Strict variant, one of three such variants from previous versions of XHTML and HTML, to help provide a clean, sparse appearance to text.

She said, for example, developers could use XHTML 1.1 when designing Web pages, and use a specialized module to deliver content to the desktop in frames, offering all of the functionality of a frame while also offering clean content. ■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Fujitsu Enters App Server Market

Updated business process engine rounds out offering

BY DOUGLAS FINLAY

Fujitsu Software Corp., the American-based subsidiary of Fujitsu Ltd., has entered the U.S. application server business market by offering to developers the Interstage Application Server 4.0 and the iFlow 4.1, a Java-based business process automation server.

"The application server has been used for mission-critical high-availability, high-reliability functioning and performance within financial institutions in Japan," said Simon Avriel, Fujitsu Software's product manager of the Interstage Application Server. He said the main focus within the American market would be on offering high reliability and high availability within finance, health-care, manufacturing and telecom industries, among others, "wherever high transactions are a necessity."

He said the J2EE-based application server has it roots in a CORBA-compliant object request broker, adding that the underlying ORBs could perform transactions at close to 1,000 per second. Running atop the server, he said, was the Enterprise JavaBeans container, or runtime environment.

Avriel said that Interstage 4.0 can connect with existing databases, such as IBM Corp.'s DB2, Microsoft Corp.'s SQL Server and Oracle Corp.'s 8i.

"Perhaps the most important change to iFlow 4.1 is that it has been incorporated into the Interstage product line," said Paula Negron, Fujitsu's iFlow product manager. She added, however, that there are more changes to the iFlow 4.1 than its simple reorganization into the line. For example, Negron said developers could now use Remote Method Invocation (RMI) as a communication mechanism between the adapters and the workflow engine, rather than previous editions' CORBA communications. "We now offer both options, because developers coming from the Java community tend to be more familiar with RMI."

Changes to the GUI side include a shift from AWT to Swing components on the Java clients to offer more functionality, such as printing and zooming. The Java-based reporting client is also new, Negron said.

In addition, iFlow now features new template versioning support, which the company claims permits developers to save runtime modifications for reuse, enables quick response to changes in the business process, and offers better capabilities for process administrators to manage templates in the product server by changing template states from draft version to publish.

"We have also committed to implementing WorkFlow XML, from the Workflow Management Coalition," said Negron. WFXML is a standard for allowing business process workflow engines to communicate with each other. "This will excite large companies with workflow engines that need to communicate [with] each other," she said.

Both products will be available at the end of July. Pricing had not been announced at press time. ■

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JavaOne: Still About the Code

Third-party vendors emphasize infrastructure, integration

BY DAVID RUBINSTEIN AND ALAN ZEICHICK

SAN FRANCISCO — While much of the buzz at JavaOne revolved around the latest trends—Web services and Java in embedded devices—many traditional code creation, testing and management vendors showcased new versions of their tools, keeping the feet of the visionaries rooted to the ground.

After 10 years as a services company, **Spectrum Software Inc.** launched its first product, a source configuration management toolkit, SpectrumSCM, that despite costing only $750 per user is claimed to be a full-featured solution. "There was a big hole in the market," said Adrian Raybould, director of software development at Spectrum. "The high-end tools are very expensive, complicated and awkward to maintain. The low-end tools, that you have to buy in pieces of functionality, often have integration problems." SpectrumSCM is a Java-based toolkit for version control, process control, release management, branching and issue tracking without dependence on an underlying operating system. SpectrumSCM also is Web-based for use by disparate members of an organization, with SSL, cryptography extensions and digital signature security.

In the code visualization space, Dublin, Ireland-based **Headway Software Inc.** has integrated Headway reView 2.4 with Sun's Forte for Java development suite. The $1,000-per-seat reView is designed to take code and reverse it into a tree structure or model so developers "can see exactly what they have," said Brendan O'Reilly, CEO of the 18-month-old company. Meanwhile, **Visicomp Inc.** has improved its VisiVue runtime tool for trace text filtering, allowing developers to customize what founder Ron Hughes called "the smoking gun" of application failure to see just the lines of code where they suspect the problem to have occurred.

Another company focused on debugging, **The Kernel Group Inc.**, showed off a new version of its AutoTrace tool that now adds Java compatibility and native compiler support. The AutoTrace 3.1, according to the company, can trace Java threads, as well as the C/C++ supported by previous versions.

At the show, **Instantiations Inc.** claimed that next month it will release a version of its jFactor code refactoring tool for the JBuilder development environment. jFactor, which costs $695 per seat, currently has 23 refactoring functions for improving the design of code as it is written. jFactor already is integrated with IBM's VisualAge for Java.

Released into beta last week, Bean-test 4.1 from **Empirix Software Inc.** is scheduled for general release in August. The upgrade includes a graphical user interface for method ordering, so more people in an organization can use

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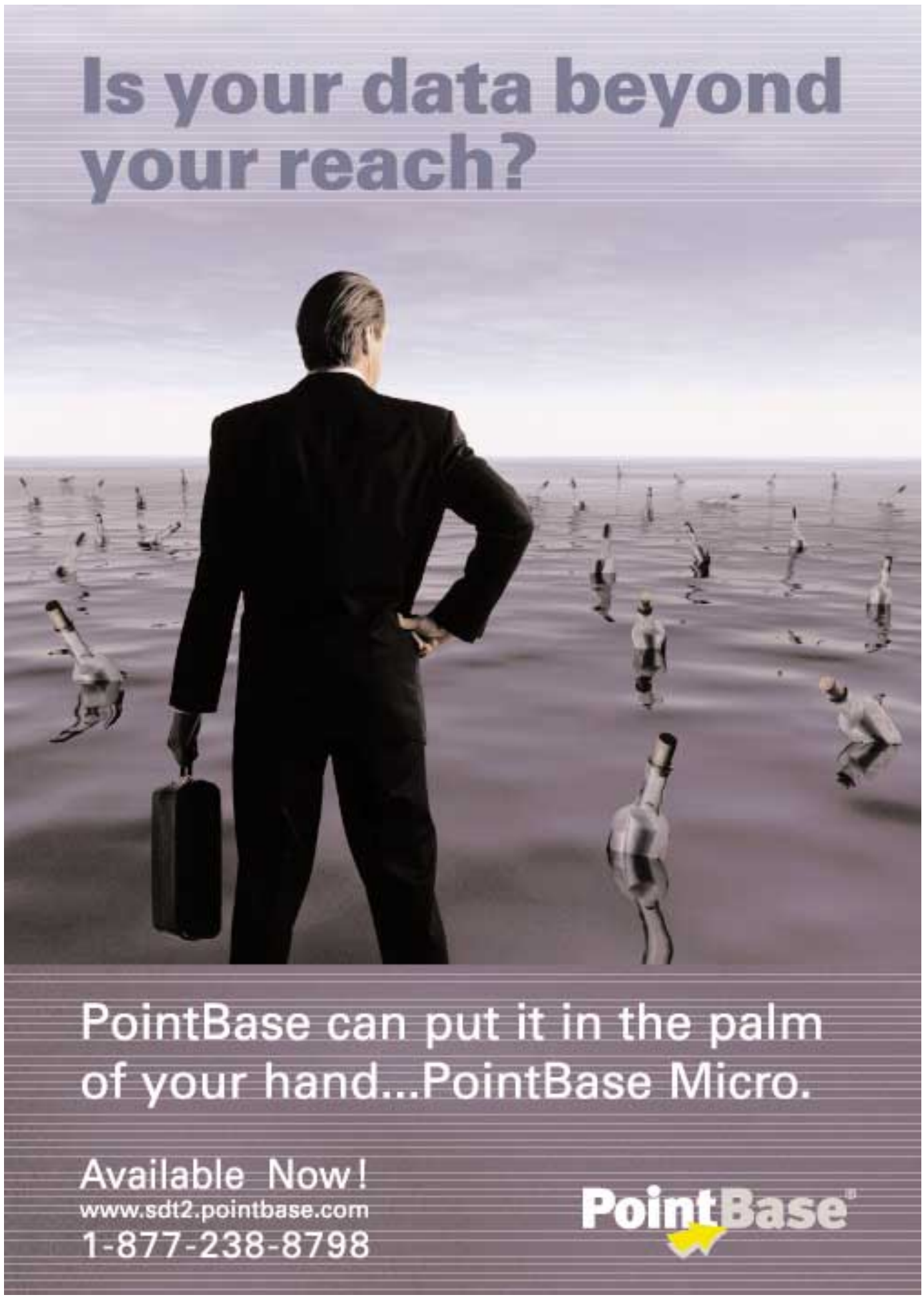

e-Numerate's Web-Based Tool Charts Data Dynamically

BY DOUGLAS FINLAY

e-Numerate Solutions Inc. is slowly taking the wraps off a new Web-based development toolkit, which the company claims lets Web developers build dynamic chart interaction into Web sites that requires no extra coding from other data sources to create extra charts.

The as-yet unnamed Web development toolkit, which the company expects to release in the fourth quarter, builds a Java applet that, when called from the server, runs locally using the company's proprietary Readable Data Language (RDL) file format. The file format contains metadata of data sets that are presented as chart information in a customized format the user selects.

"The toolkit is designed to cut down on Web developers' time in coding specific charts on a Web site as requested by users, by programming in flexibility for them to use the data the way they see fit," said Justin Harrison, e-Numerate's (www.e-numerate.com) director of product marketing.

He said the development kit contains a screen enabling developers to extract data from several data sources, including spreadsheets and databases, and convert the data into an RDL format. "The Web kit then creates a Java applet and incorporates the RDL into it," he continued.

Developers can include several chart types for user needs.

Harrison said developers can consult with users on the types of charts they may want included in their displays—such as line, bar, stack or cluster; as single presentations or multiple side-by-side comparisons; and as transformations such as incremental percentage changes and cumulative changes—and then build those preferences into the Web site. "Otherwise, developers would be writing code for each chart type the user requested," he noted.

Harrison said the toolkit, now in beta testing, will run on Java 1.1.4 in any HTML 4.0 browser, or higher. ▮

SUN

◂ continued from page 1

which introduces support for EJB components and for the creation of Web services using an XML binding wizard, automatic registration of Web services with UDDI, and support for SOAP and WSDL. Pricing for the enterprise edition has not yet been disclosed. Both versions of Forte for Java can develop applications for Java 2 Micro Edition, and include the ability to simulate J2ME running on a portable wireless platform within the IDE.

The Forte team has also integrated its Java tools with iPlanet's Web Server and Application Server 6.0, using what Kleijnen described as plug-ins for seamless IDE-based deployment of applications to test or production platforms; she said that other companies, such as BEA, have also created plug-ins to the environment to automate deployment, but that the iPlanet integration is the only one that will be directly supported by Sun.

On the **Java 2 Enterprise Edition** front, managers revealed that although Sun still won't predict a general availability date for either version 1.3 of the specification or EJB 2.0, the company has already begun thinking about J2EE version 1.4. According to Rick Saletta, group marketing manager for Enterprise Java Technologies, the focus of J2EE 1.4 will likely be on Web services, with support for Java's current XML extensions integrated into the core platform. But, as he put it, the final word rests with the Java Community Process.

Followers of Sun's **Project JXTA** (short for Juxtapose), which seeks to develop protocols for peer-to-peer networking and application integration, can download code that Sun has newly donated to this open-source initiative hosted by CollabNet at www.jxta.org, according to Steve Waterhouse, director of engineering for the project. The code, he said, was donated under an Apache-style license that does not prelude its use in commercial products or require that extensions be donated back to the project; all that's required, he said, is that Sun receive documented credit for its contributions. The new code includes a content-management system, an end-user shell, a search engine and a bunch of sample applications.

IPLANET QUEUES UP

iPlanet, the joint venture of Sun and AOL's Netscape division, used JavaOne to reveal a new version of its **Message Queue for Java**, which contains the company's first implementation of the Java Message Service version 1.0.2 APIs. Version 2 of the message queue is priced at $4,000 per server processor. Previously, the product was called Java Message Queue; it is specifically designed to work with iPlanet's Application Server and Integration Server.

The company also released a minor upgrade to its Application Server; it now includes an open-source implementation of the SOAP protocol. Application Server 6.0 is priced at $1,495 per server processor.

AT YOUR SERVICE

Sun is throwing considerable weight behind what it calls the service-provider market, offering new tools to help telecommunications carriers not only control their circuit-switched communications infrastructure using Java-based "softswitches" instead of dedicated switching hardware, but also handle support tasks such as billing, provisioning and content delivery. A new initiative, called **Java Technology for Service Providers** (JTSP), envelops existing programs in this market with a new Java Service Request for a systems architecture, third-party compatibility tests and emphasis on applications development. ▮

News Briefs

COMPANIES

Sun Microsystems Inc. has forwarded the first major implementation of the Jini network technology surrogate architecture to the Jini technology community. The architecture, based on both Java and Jini, defines how devices with limited processing power can interact over a network . . . **Microsoft Corp.**'s new Windows Embedded Startup Program targets new companies that want to build devices using free tools and runtime licenses for use on Windows CE or Windows NT Embedded. Other offerings in the program include access to Microsoft Embedded product information and road maps, and opportunities to participate in Windows Embedded design reviews and developer conferences . . . **Green Hills Software Inc.** has integrated its Multi 2000 Integrated Development Environment with **Rational Software Corp.**'s Rose RealTime modeling tool, which both companies say will simplify conceptualization, development and deployment of complex embedded applications for a wide range of microprocessors and real-time operating systems . . . To make its Web eBMP monitoring and management service within the QoEtient platform more secure, **Fujitsu Software Corp.** has partnered with **Qualys Corp.** to incorporate its security audit services into the platform. The heightened security services within QoEtient will now enable developers to use eBMP to make suggestions for solutions to potential security problems, and direct developers to available fixes.

PRODUCTS

Metrowerks Corp.'s **CodeWarrior for QNX, version 2.0** enables developers working on the QNX RTOS environment to now gain improved code debugging and compiling capabilities on PowerPC and *x*86 hosts. Version 2.0 costs $4,995 . . . NuSphere Corp. has released its **MYSQL Advantage 2.1**, a Web development program for small to medium-sized companies. Included in the new release is the Access Manager for Apache, which provides control of individual and group access to a Web site, such as adding, editing or removing users, assigning group privileges and adding new groups. Cost for Advantage 2.1 is $299 per server . . . ActiveState Corp.'s new **PerlEx 2.0** plug-in for Windows-based Web servers lets developers write Perl code that embodies a service and then deploy it to PerlEx, which generates the appropriate Web Services Description Language file for remote invocation using SOAP. PerlEx 2.0 costs $395 per CPU . . . Viosoft Corp. has unveiled its **Arriba 1.2 Embedded Linux Kernel Edition** for Intel Corp.'s StrongARM SA-1110 development environment. Arriba 1.2 is an IDE with an integrated source-level kernel debugger, target configuration wizard, Linux kernel project management wizard, cross-platform compiler and target monitor for remote source-level kernel driver debugging . . . Thought Inc. has updated its **CocoBase Enterprise O/R** object-relational mapping to now support Transparent Object Persistence, a new means of mapping existing objects or object classes to a database without changing either the object or object graph's source or binary code, according to the company.

PEOPLE

J.D. de Haseth has been appointed president of KXEN's (Knowledge Extraction Engines) American headquarters. He will report to **Roger Haddad**, KXEN's founder and CEO . . . **Mark B. Thompson**, current president of Citrix Systems Inc., has been appointed its CEO, while **John Cunningham**, in addition to his current responsibilities as CFO, has been named senior vice president of finance and operations . . . Tower Technology Corp. has added **T.W. Cook** as a new vice president of product operations, and **Bob Donaldson** as vice president of its new professional services group. Prior to joining Tower, Cook was at EDS and Terrace Mountain Systems; Donaldson was at Epicentric and PSW Technologies . . . **Ellen Rome** has joined NeoCore Inc. as vice president of marketing. Meanwhile, **Mark Stavrou** joins NeoCore as vice president of sales . . . Rogue Wave Software Inc. has named **Mark Manley** as vice president of development. He most recently held technology management positions at Lehman Brothers. ▮

STAVROU

ROME

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Server-Side Wares Take Center Stage at JavaOne

BY ALAN ZEICHICK
AND DAVID RUBINSTEIN

SAN FRANCISCO — At JavaOne, many exhibitors proudly showed off their latest server-side wares. Although the stars of the show were J2EE-based application servers, components and frameworks also had a strong presence at the conference.

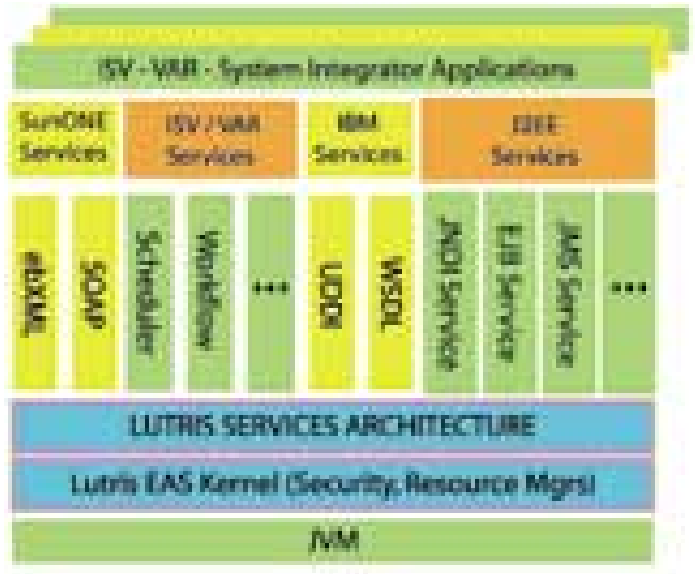
Two of the largest J2EE platform vendors, **BEA Systems Inc.** and **SilverStream Software Inc.**, enhanced their offerings with Web services capabilities.

BEA introduced its WebLogic E-Business Platform, which contains its WebLogic 6.1 application server, in beta now, a new Integration Server and Portal 4.0. WebLogic 6.1 allows users to create WSDL, SOAP and XML interfaces for stateless session beans and to create an internal directory of Web services with documentation, said Michael Smith, BEA's e-commerce server division principal evangelist. "WebLogic deals with Web services at the HTTP and routing level," he said, adding that the app server now includes an XML parser and a SOAP client. It also supports Sun's J2EE Connector architecture, and generates beans for consuming Web services, he said.

WebLogic Integration Server, due at the end of June, is the evolution of WebLogic's Collaborate and Process Integrator and incorporates ebXML for application integration and process management, Smith said. Portal 4.0 incorporates the company's Personalization Server so enterprises can set standards and levels of security. New features include a rules engine for customized interaction, delegated administration tools and reusable components for standardizing Web presentation, according to Peter Tait, director of Internet marketing. Pricing was not available at press time.

At SilverStream, the Extend Workbench has gone into beta release, representing one of what the company is calling e-business engines that sit atop an application server and deal with such things as XML integration, workflow, rules and content management, according to CEO David Litwack. Workbench, he explained, is a set of tools and wizards for building new Web services and XML-enabling existing applications to become services. Litwack said Workbench includes a WSDL editor, a UDDI browser and a SOAP runtime; wizards for EJBs, JSPs, servlets and Lava classes; a set of editors; and support for third-party tools such as Borland's JBuilder and Macromedia's UltraDev and DreamWeaver. "This is the market coming to us," he said. "In the era of irrational exuberance, SilverStream's customers were doing meat-and-potatoes IT stuff, not glitzy Web sites. They pushed us on transactions and plumbing."

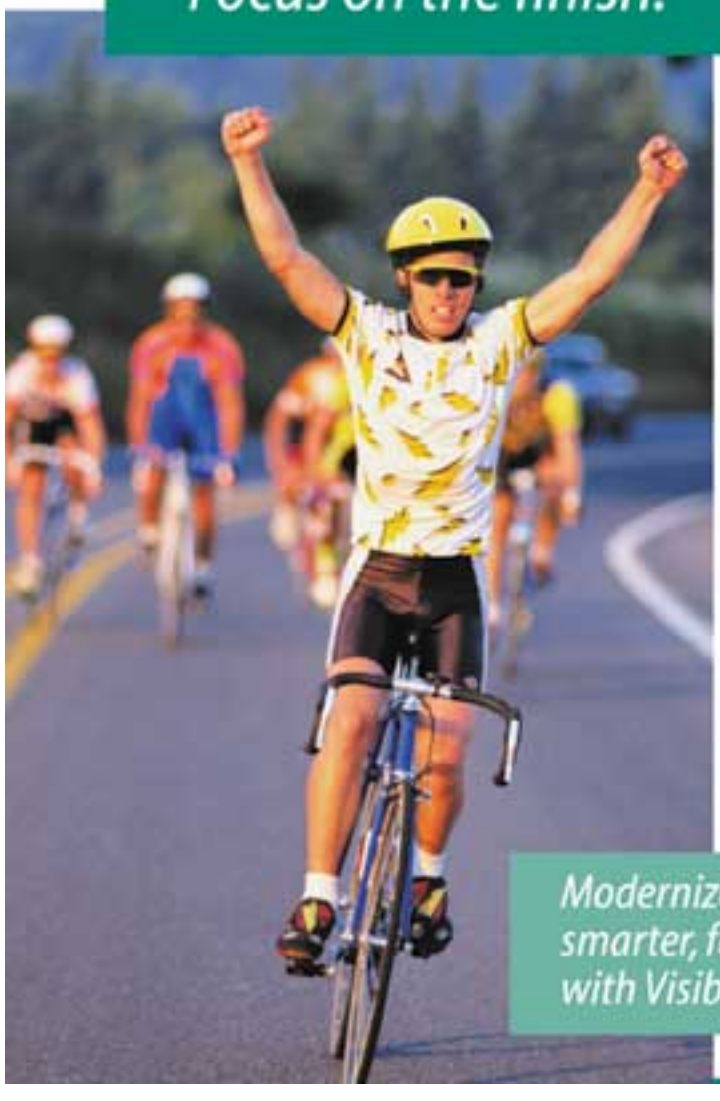
Extend runs on SilverStream's application server as well as those from BEA and IBM, Litwack said. Final release of Workbench is expected in the fall. The producer and consumer sides of the Workbench will be sold separately but will be priced "to encourage people to buy both," Litwack said. The price was not available at press time.



Lutris' EAS architecture allows services to be plugged in as needed.

Lutris Technologies Inc.'s EAS4 application server, a J2EE extension to its Enhydra server, is now in final beta prior to general availability later this year. EAS4 is based on a services architecture and is a kernel that sits between a JVM and the Web services that users wish to plug into the system, explained founding president David Young. It allows

▸ continued on page 24



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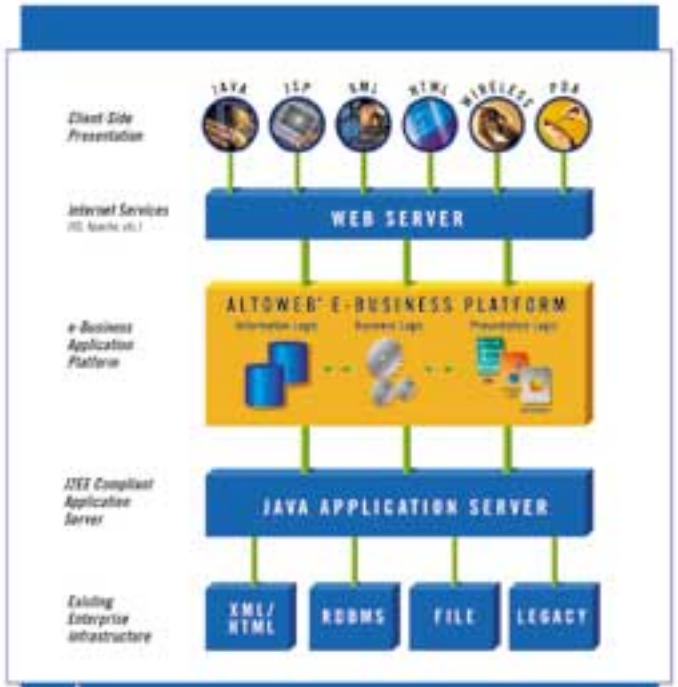
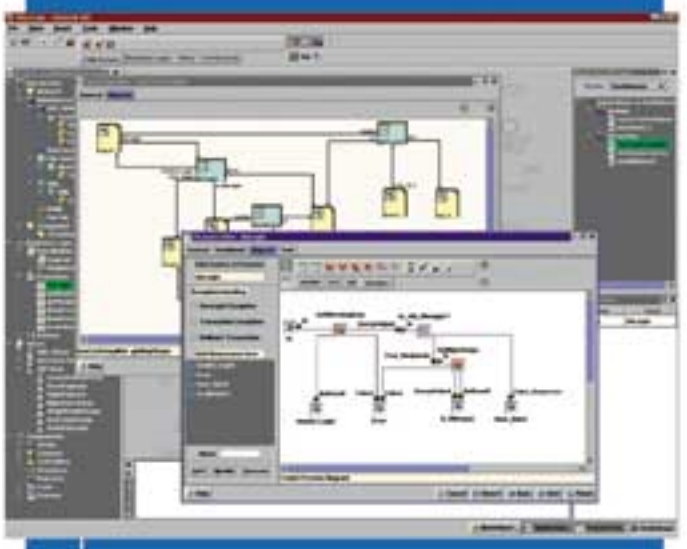


The AltoWeb e-Business Platform lets you assemble, deploy, monitor and manage J2EE applications.



Live component assembly shrinks the time spent on assembly, testing, deployment and maintenance from months to days.

Reusable components hide the complexity of J2EE

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Live application assembly and deployment saves time

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It's easy to see for yourself the benefits of the AltoWeb e-Business Platform.

You can download a FREE 30-day evaluation copy and get more information at www.altoweb.com.

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AltoWeb

Design Tools, XP Dominate UML World

BY DOUGLAS FINLAY

NEW YORK — Amid lighthearted session repartee about whether extreme programming (XP) is a superior approach to tried-and-true formal methodologies, the third annual UML World, held here last month at the Crowne Plaza Hotel, offered up new products and improvements designed to ease the UML developer's tasks.

"This third-annual show proves that UML is maturing and that many developers are now beginning to focus on it and implement it as their modeling choice within the large-scale corporation," said Michael Gottlieb, show director at CMP Media LLC, which produced the event. While indicating this year's final attendance dipped from last year's due in part to a weakening economy, he said the conference still provided the only platform for the continuing discussion of the merits of extreme programming versus use-case methodologies, in delivering code, for example. "XP proponents believe they can go much farther and cheaper with their approach than taking the six or so months to develop a model and then test it," Gottlieb said.

Meanwhile, as discussion prevailed among the attendees, new or improved products were still being showcased. **Popkin Software & Systems Inc.** released version 8.2 of its System Architect 2001 enterprise modeler, which adds semantic integrity, support for packages and customization. "Semantic integrity authenticates the process, such as automatically updating a diagram throughout the rest of the model," said Jan Popkin, CEO.

He said that version 8.2 could now break down model code into components for clarity. For the new customization offering, he said definitions and symbols could now be extended to all diagrams to provide stereotype functionality.

Sybase Inc. discussed its new PowerDesigner 9.0 business-process modeling tool, code-named Neptune, which is currently in beta. The release adds new component and activity diagrams, and new O-R mapping. Dimitri Volkman, Sybase's worldwide product marketing manager, said the component diagram would "allow developers to understand software as components, and create symbols of them within UML"

Regarding the O-R mapping feature, Volkman explained that mapping is invoked at design time so that if there is no correlation between certain objects and relational data, developers can fill in the gaps at the precise moment of design, rather than send out a completed design that still needs to be mapped. Sybase expects to release the software by the end of the year.

Iconix Software Engineering Inc. revealed it would build an add-on to Rational Software Corp.'s Rose UML modeling tool that automatically creates Rational TestManager requirements and test cases from use-case models in Rose.

Iconix CEO Doug Rosenberg said that with a "gaping hole in modeling-to-testing, when you go to the trouble of writing use cases, you will now be able to test them." ▮

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Telelogic Creates Synergy Between Component Teams

BY EDWARD J. CORREIA

Development collaboration tools maker Telelogic North America Inc. has released CM Synergy 6.1, an update to its change-management tool that it says now offers more for developers building reusable components.

CM Synergy is an enterprise development collaboration tool for Linux, Unix and Windows that features version control; configuration, build and release management; and change-request tracking.

According to Paul Van Den Berg, Telelogic's vice president of marketing, one of the greatest challenges facing component development teams is knowing what the others are doing and keeping components interoperable. "Our main advantage is knowing exactly what is in each build and keeping track of dependencies" between components.

Van Den Berg described the Telelogic (www.telelogic.com) strategy, which enables developers to build so-called process patterns. "It's all about best practices," he said. The new version backs that up with a host of predeveloped patterns, plus a graphical interface for editing them or creating new ones. CM Synergy 6.1 is available now for Linux, Windows and several versions of Unix.

"This is a major new version we've been working on for about a year or so," Van Den Berg said, calling version 6.0 a "limited release." ▮

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QSM CREATES SLIM SUITE 5

BY CHRISTINA M. PURPI

Improving time-to-market and reliability of software projects may become easier thanks to SLIM Suite 5, a new software bundle from project management solutions developer Quantitative Software Management (QSM) Inc.

QSM (ww.qsm.com) develops and markets software for software estimating, project control, productivity analysis and risk migration, and has recently combined four of its existing products into the Software Lifecycle Management (SLIM) suite, which is designed to support an iterative metrics process consisting of estimation, tracking and benchmarking, the company said.

The SLIM suite will include QSM's Metrics, Control, Estimate and Data Manager applications, which, according to the company, will be integrated with several new technologies and wizards to constitute the suite.

Metrics stores and analyzes project data to detect relationships and trends; Control is a project assessment tool for managing predictability and outcome; Estimate is a project planning and estimation tool; and Data Manager collects information from thousands of software projects to keep records up-to-date.

Doug Putnam, QSM's vice president, said the suite represents more than simply gluing components together. "It's a complete rearchitecturing of our original framework," he said. Available now, pricing ranges from $12,000 for a single user to $70,000 for the multiuser version, according to Putnam. ▮

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Mac OS X

An Overview for Developers

With Mac OS X, Apple asserts its leadership in the advanced technologies and design sensibilities that are the hallmarks of any great operating system.

Mac OS X is a completely rebuilt implementation of the Macintosh operating system. It expands on Apple's technological strengths, such as industry-standard networking capabilities and industry-leading user interface design.

More importantly, Mac OS X combines those strengths with support for a variety of technologies beyond those typically associated with the Macintosh, such as UNIX and Java 2 Standard Edition. This unique combination of technologies offers developers stability, power, and interoperability, beneath a well-designed, elegant, and intuitive user interface. As a result, Mac OS X presents new opportunities for both development and deployment.

Darwin

The stability of Mac OS X begins with Darwin, the open source core of the system. Darwin integrates a number of technologies, including the Mach 3.0 kernel, operating system services based on BSD UNIX, high-performance networking facilities, and support for multiple integrated file systems. Further, Darwin's modular design lets developers dynamically load such things as device drivers, networking extensions, and new file systems.

> **Apple and Open Source**
> Apple is the first major computer company to make open source development a key part of its ongoing software strategy. The core of Mac OS X, Darwin, is itself an open source project. This approach to operating system development allows developers and students to view the Darwin source code, learn from it, and submit suggestions and modifications. Developers can participate in the Darwin open source project by signing up at **http://www.opensource.apple.com**.

Darwin's advanced memory protection and management system ensures reliability by allocating a unique address space for each application or process. The Mach kernel augments virtual memory semantics with the abstraction of memory objects. This enables Mac OS X to manage separate application environments simultaneously, while presenting users with a seamless experience.

Darwin also supplies the following advanced functionality:

- Preemptive and cooperative multitasking.
- Symmetric multiprocessing (SMP) augmented by support for multithreading.
- Real-time support guaranteeing low-latency access to processor resources for time-sensitive media applications.
- An object-oriented device driver programming framework called I/O Kit.

Graphics System

Mac OS X combines three powerful graphics technologies, Quartz, OpenGL and QuickTime, enabling developers to push graphics beyond anything users have seen on a desktop operating system.

Mac OS X system architecture

Quartz

Quartz is the foundation of the Mac OS X imaging model. It is comprised of a high-performance, lightweight window server and a graphics rendering library for two-dimensional (2D) shapes. The window server features such advanced capabilities as device-independent color and pixel depth, layered compositing, and buffered windows for the automatic repair of window damage.

The Quartz rendering model is based on the cross-platform Portable Document Format (PDF) standard, enabling developers to easily embed and manipulate PDF data within any Mac OS X application. This yields such benefits as automatic PDF generation and save-as-PDF, automatic onscreen preview of graphics, conversion of PDF data to printer raster data or PostScript, and a consistent feature set for all printers.

The layered compositing engine used by Quartz allows developers to create unique onscreen effects. It replaces the "switch model" of traditional windowing systems with a "video mixer" model in which every pixel on the screen can be shared among windows in real time. This model allows for smooth transitions between the states of the graphical user interface.

Quartz also provides developers with these advantages:

- On the fly anti-aliasing of graphics and text enabled by the use of a floating-point coordinate system and high-precision vector processing.
- Direct access to the video frame buffer.
- Automatic detection of and benefit from the floating-point coprocessing performed by the Velocity Engine in PowerPC G4 microprocessors.

OpenGL

For three-dimensional (3D) graphics, Mac OS X features an optimized implementation of industry-standard OpenGL. OpenGL is one of the most widely adopted graphics standards today, making code written to OpenGL extremely portable and making generated visual effects highly consistent. It is specifically designed for games, animation, CAD/CAM, medical imaging, and other applications that need a rich, robust framework for visualizing shapes in two and three dimensions.

QuickTime

Mac OS X comes packaged with the latest version of QuickTime, a powerful multimedia technology for manipulating, enhancing, and storing video, sound, animation, graphics, text, music, and even 360-degree virtual reality. It also allows streaming of either live or stored digital video. As a cross-platform technology, QuickTime can deliver content on Macintosh and Windows systems. Augmenting its cross-platform capabilities, QuickTime supports every major file format for images and every significant professional file format for video.

Through the QuickTime plug-in, QuickTime's digital video streaming capability is extended to all popular web

browsers. The plug-in supports over thirty different media types and makes it possible to view over 80 percent of all Internet media. QuickTime also features other advanced web streaming capabilities, such as movie "hot spots" and automatic web page launching.

User Interface

The most visible expression of Mac OS X power and technology is its new user interface, Aqua. Apple applies its leadership in user interface design to Aqua, incorporating many of the qualities and characteristics Macintosh users expect, while adding advancements to benefit expert and novice users alike. Ease of use is factored into every feature and capability.

Consistent with Apple's design philosophy, visual enhancements serve not just as beautiful images, but as cues to the functionality and operation of the system.

A prime example of this user-focused design is the use of "sheets." These non-modal dialog boxes attach directly to the title bar of the relevant document, intuitively linking document and action. The non-modal nature of sheets prevents applications from hijacking the system and interrupting user workflow.

Interoperability

Mac OS X makes unprecedented use of technologies and standards that allow interaction with other platforms. This affords both developers and users the opportunity to use Macintosh computers in new places and in new ways. Mac OS X manages multiple file and networking formats and supports a wide range of industry-standard protocols. Based on an enhanced VFS design, the file system supports multiple local formats and complies with POSIX file system semantics.

Hardware connectivity is simplified through built-in support for Ethernet (10/100/1000Base-T); serial connections for modems, ISDN, DSL; wireless networking through AirPort (IEEE 802.11); USB (Universal Serial Bus); and FireWire (IEEE 1394).

Java 2 Standard Edition

Mac OS X ships with a complete implementation of Java 2 Standard Edition (J2SE) version 1.3, including the HotSpot client virtual machine. Benefits of Apple's Java implementation include access to Aqua user interface elements "for free" through Swing, native preemptive multitasking, automatic multiprocessing support and management of JAR files as shared libraries.

This last advance improves the speed of execution and reduces the RAM footprint of applications which rely on the same archive, such as applications within suites. Mac OS X also plugs the Java windowing toolkit more directly into the Mac's native windowing toolkit, giving Java applications and applets the graphics performance benefits of Quartz.

Backward Compatibility

To afford users a gentle migration path, Mac OS X builds on Darwin's ability to manage multiple application environments simultaneously. The Classic environment is actually a full version of Mac OS 9.1 running in a protected memory space under Mac OS X. As a result, most Mac OS 9 compatible applications will run side-by-side with Mac OS X applications.

Additionally, developers can code for Carbon, a native Mac OS X environment that allows programmers to take advantage of advanced Mac OS X features while retaining compatibility with the installed base of Macintosh computers running Mac OS 8.1 and later.

Development Options

There are multiple ways to develop for Mac OS X. Individual skills, preferred languages and tools, target user base, and time to market concerns will influence a developer's approach:

Carbon

The Carbon APIs are based on earlier Mac OS APIs. While Carbon allows applications to take advantage of Mac OS X features such as multiprocessing support and the Aqua user interface, Carbon is specifically designed to allow compatibility with older versions of the Mac OS.

Cocoa

The Cocoa application environment runs natively under Mac OS X. For those who wish to develop for Mac OS X using rapid application development (RAD) tools and object-oriented techniques, the Cocoa frameworks provide a fast and complete way to do so. These frameworks offer both Java and Objective-C APIs.

Java

The Java application environment allows development and execution of Java programs on Mac OS X, including 100% Pure Java applications and applets. The J2SE implementation in Mac OS X is designed to allow maximum Java application portability. Developers can also use the Java development language to write a Cocoa application, allowing Java programmers to use a familiar language to develop for a new platform.

UNIX

Since Mac OS X is built atop a UNIX kernel, porting UNIX-based applications to the platform is relatively easy. This enables enterprise-level UNIX products to enjoy parity with consumer and business applications on a commercial desktop platform.

Mac OS X offers opportunities for developers from many different backgrounds to port and build innovative and compelling applications.

And the best way to get started is with the Apple Developer Connection:

Apple Developer Connection membership programs offer benefits such as prerelease software seeding, code-level technical support, news and technology updates, and discounts on business support services. Developer documentation and resources are available free at **http://www.apple.com/developer**.

To learn more about developing for Mac OS X, visit the Mac OS X development website at **http://developer.apple.com/macosx**.

To request a free **Programming for Mac OS X CD-ROM** containing tutorials, sample code, and technical documentation designed to provide step-by-step descriptions of the methods developers can use to create Mac OS X applications, visit **http://developer.apple.com/sdtimes.html**.

ADC
Apple Developer Connection

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JAVA ONE

◂ continued from page 11

the testing tool earlier in the development cycle, according to Bean-test product manager Diane Mailloux. The new version also allows for extensible testing configurations, in which the results of one Enterprise JavaBean method can be passed to another, or the testing of more than one EJB in one test case, she said. The data sources can be randomly generated or user-supplied, depending upon the needs of the application, and the runtime of the load test can be customized, she added.

Working to improve the performance and reliability of Java applications, **VMGear Inc.**—which changed its name from Intuitive Systems Inc. in April—has a new suite of software, called Optimizeit. According to the company, Optimizeit includes three tools: a memory and performance profiler, a real-time thread debugger, and a code-coverage checker for use during test sessions. Optimizeit Profiler has been an existing stand-alone product; the debugger and coverage tools are currently in beta for Windows and are expected to be generally available in the fall on Linux, Solaris and Windows.

Sitraka Software Inc. has updated its JProbe code management and JClass interface-building components, and also will support the Java Network Launching Protocol (JNLP) in its DeployDirector application management solution. JProbe 3.0 now has snapshot differencing capabilities that allow development managers to set baselines for application performance and then to test the applications against them; an instance viewer that can narrow down code to find memory leaks; and improved examples and documentation, according to Jeff Zado, Sitraka's JProbe product line manager. In addition, the software now runs on AIX and HP-UX, with support for Oracle's 9i application server expected in the next release, Zado said. In JClass 5.0, Sitraka has added 3D charting capability and has created JClass ServerChart, which takes advantage of application server services and scales along with the server to provide 3D charting capability for server-side applications, Zado said. Also, Sitraka has sold its Sitraka Mobility division to Everypath Inc., a developer of wireless applications, for an undisclosed sum.

Programming for nonprogrammers? To the list of companies that target "business analysts" with drag-and-drop developer tools, add **Synthis Corp.**, whose new Adalon, unveiled at JavaOne, is intended to complement software such as Rational's Rose and TogetherSoft's ControlCenter, according to company president Wells Burke. The Java-based tool lets those nontechnical users diagram the business processes within an e-business application, including data types, data rules, error conditions, messages and workflow dependencies. When the design is complete, the data is stored in a proprietary data format that the company calls adXML, or Application Design XML; the adXML data can be used to generate code skeletons. The prerelease version of Adalon is currently available for early access partners; general availability is scheduled for August.

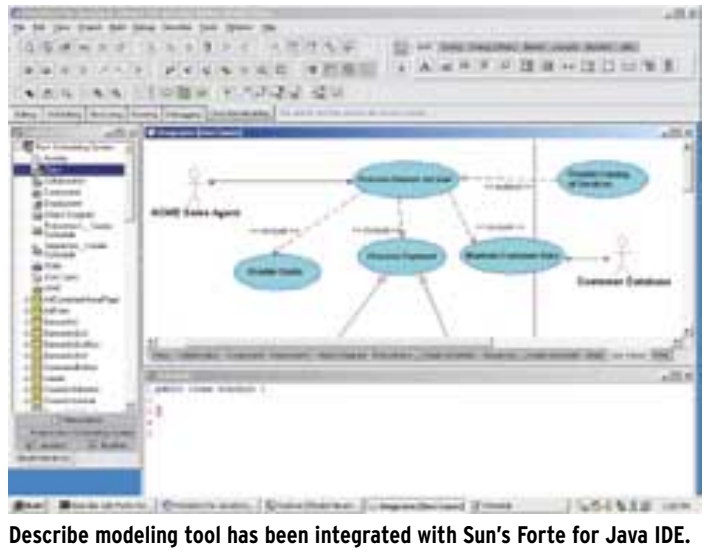
Rational Software Corp. has integrated its Rose UML modeler and ClearCase code tester with Sun's Forte for Java IDE. The integration allows the auto-synchronization feature to be turned off between the code and the model on a class-by-class basis, according to Bill Taylor, director of product marketing for Rational's visual modeling and developer tools. Rational also launched jRoundup.com, which Taylor described as a vendor-neutral Web site that has aggregated materials relative to Java and allows users to download servlets, applets and EJBs with tutorial support and discussion groups.

Wily Technologies Inc. released its Introscope 2.6 Web application monitor with integration for the iPlanet and HP Bluestone application servers, in addition to BEA's WebLogic. Introscope, according to marketing vice president Vic Nyman, can tell developers what is going on inside a JVM, alerting them to system breaks and allowing for performance trend reporting. The new version adds automatic performance management when the tool is used with a supported application server.

Sybase Inc., although best known for its database software, also offers development tools, and the company was previewing the next version of one of them—PowerDesigner—at JavaOne. The new version, yet to be numbered, includes business process modeling, first-time support for UML activity and component diagrams, better support for EJBs, integrated data-warehouse modeling, and support for Microsoft's Visual Basic for Applications scripting language. The company plans to release a beta of the updated PowerDesigner before August, and claims that the software will be generally available in the fourth quarter.

Data Representations Inc. unveiled three extensions to its Simplicity software family. Simplicity Enterprise, which the company says will be generally available in early July, is a graphic component-based development environment that is designed to add functionality to Java servlets by incorporating databases, XML documents, files and EJBs to server-side Java applications. For J2ME developers, Simplicity for Mobile Devices, also expected in early July, provides an environment for building software compliant with Sun's Mobile Information Device Profile; it also includes a J2ME MID emulator. New at the show was a Simplicity for Palm OS, which the company has priced at $695 per developer set. Pricing for the other versions was not revealed at the show.

Embarcadero Technologies Inc. renamed its GDPro modeling tool Describe, and has given developers the ability to see both a UML model and code from a single screen, alleviating the need to toggle back and forth between the model and the development environment. Describe also now includes a bridge to its ER/Studio database to allow an application to be built based upon the database model.



Describe modeling tool has been integrated with Sun's Forte for Java IDE.

Describe, to be available this month, integrates with Sun's Forte for Java IDE, with future integrations for JBuilder, VisualAge for Java and VisualCafé expected, the company says.

A new application from **RadView Software Ltd.**, called WebFT, is designed to provide functional testing of Web applications. WebFT, which the company says will be available in late July for $4,995 per developer seat, uses a JavaScript-based language to create test scripts. The program offers both a graphical icon-based testing environment and a command line from which QA staff can execute JavaScript calls to manually exercise specific Web application features.

RadView says the same language, which it calls SmartScript, is used on all of the company's testing products as well.

Finally, for developers using **Jcorporate Ltd.**'s Expresso open-source Web application framework, JavaOne was the venue for a minor update. New in Expresso 3.1 is enhanced support for the Model-View-Controller design pattern, with a new ControllerServlet component type that can support multiple graphical user interfaces within a single application. It also includes a new tool for measuring performance of Expresso-based applications and their external URL links. The new release is now compliant with Sun's JDK 1.2, according to the company. ■

Taking Control Together

BY ALAN ZEICHICK

SAN FRANCISCO — To many observers at JavaOne, TogetherSoft Inc.'s booth was one of the busiest, as indeed it was at last year's event, possibly due to the company's passing Sun's J2EE compatibility tests with its new ControlCenter 5, a unified integrated development environment focused on optimizing the model-build-deploy development paradigm, according to company founder Peter Coad. The new release, first offered at the show, includes new UML diagram editing functions, an updated JSP/HTML editor (complete Java servlet modeling) and XMI compliance.

TogetherSoft's ControlCenter was popular not only with attendees, but also with other exhibitors.

Secant Technologies Inc. has integrated its ModelMethods code-generation engine with TogetherSoft's ControlCenter, thereby creating Java and C++ code from UML models created using ControlCenter's graphical interface. "Seventy percent of all applications are infrastructure code, and 30 percent are business logic," said Paul Horan, vice president of business development at Secant. "ModelMethods automatically generates much of that infrastructure code, allowing developers to focus on the critical business logic." He said C# code generation will be added in a future version. Horan also said ModelMethods, which ships with a high-end application server that he said is extremely focused on transactions and claims the best container-managed persistence in the Java world, will be able to plug into other app servers as the product matures. "There's a significant niche market" for high-end servers, Horan said.

Versant Corp. has also integrated software with ControlCenter, in this case its enJin 2.1 transaction accelerator. enJin 2.1 is an intermediate data cache that improves performance and makes the development process easier by having code persist in a cache, with no mapping to a back-end database required until the developer is ready to integrate his work into the database, said Charles Wuischpard, vice president of sales. He added that an integration with iPlanet is in the works; the product already supports BEA's WebLogic and IBM's WebSphere. ■

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SERVER-SIDE

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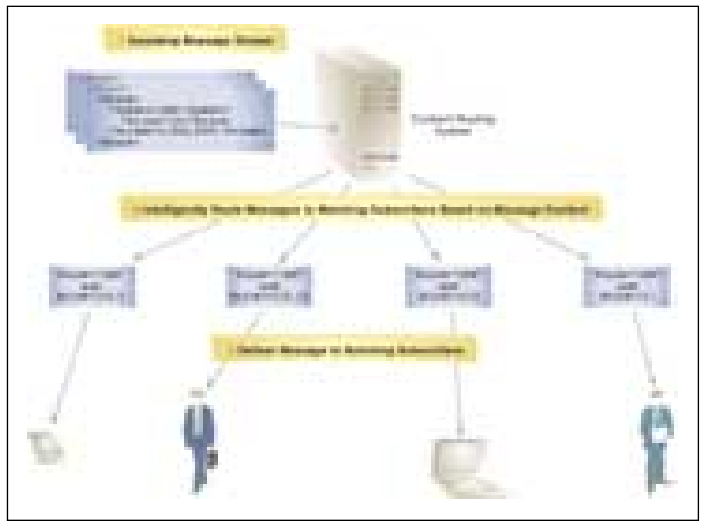
for hot deployment of services, which lets developers plug in or take out a service without bringing down the system. The services architecture, Young said, gets around the problem of what developers can or cannot do with J2EE by turning applications and services into plug-ins.

One of the original players in the J2EE space, **Iona Technologies Inc**. has not only updated its application server, but also dropped its price in an effort to gain market share in a space dominated by BEA, IBM and HP Bluestone. The company's iPortal Application Server 3.0, which now includes a copy of Sun's Forte for Java tools, supports the JDK 1.3 and JDBC 2.0. Pricing is now on a subscription model of $495 per year per developer seat, with a flat $2,500 per-processor deployment fee. The company has also upgraded its B2B Integrator Server, which provides XML, ebXML, RosettaNet and EDI connectivity; according to the company, the new version 4.2 software is now J2EE-compliant.

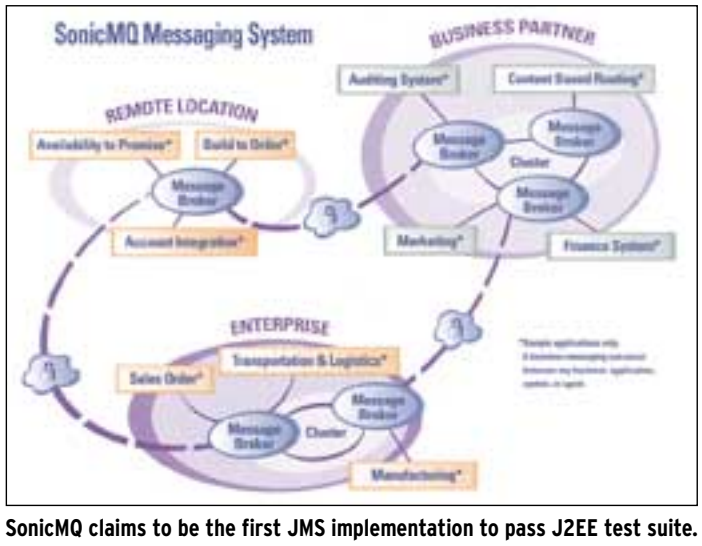
AltoWeb Inc. previewed a future release of its E-Business Platform, due out late this year, according to director of product management Rob Meyer. Built on a reusable application architecture, AltoWeb provides a graphical interface for application assembly, deployment and monitoring, he said. Users can graphically browse a UDDI registry or translate WSDL and SOAP into a higher-level view, Meyer explained. "We provide the application business logic on top of the application server," he said. "This picks up where the IDE leaves off." AltoWeb can run on ATG's Dynamo, BEA's WebLogic, Jboss' Tomcat and Sun's iPlanet application servers, and will support IBM's WebSphere when version 4.0 is released, Meyer said.



Fiorano's publish/subscribe messaging system is built specifically for XML.

Not content merely to offer its FioranoMQ JMS server, **Fiorano Software Inc.** now offers Content Router, which provides a Java-based publish-and-subscribe messaging system specifically for XML messages. According to CEO Atul Saini, the content router is built on top of FioranoMQ, the company's message queue, and a differentiator is that the router examines the content of XML messages and, based on their content, can determine which recipients should receive the message without having to continually reparse the source, destination and publish-and-subscribe data fields. The software, available now, provides 40- and 128-bit SSL message encryption using either Phaos SSLava or Sun's JSSE.

Speaking of JMS, **Sonic Software Corp.** has updated its SonicMQ Java Message Service server to version 3.5. According to the company, the latest version contains a new XPI, XAResource, which works with its Java Transaction Protocol (JTA) API, and provides two-phase commit, a necessary feature for certain types of messaging applications. Available now, SonicMQ 3.5 comes in a free developer version; a $1,000 per-seat advanced developer edition that includes what the company describes as features for complex development and testing environments; and a $5,000 per-processor deployment version. The company has also licensed J2EE and has passed the J2EE compatibility test suite.



SonicMQ claims to be the first JMS implementation to pass J2EE test suite.

Message queues and J2EE app servers weren't the only elements of server-side Java to be upgraded at JavaOne. **Tower Technology Corp.** is now shipping a new version of its TowerJ virtual machine, which according to Madison Cloutier, vice president of market development, improves compliance with JDK 1.3. The new TowerJ 3.7 also is available for Intel's 64-bit Itanium processor, which recently began shipping commercially. Tower also has revamped its licensing options, now offering its Performance Analyzer separately; previously, it had been available only when purchased with the JVM.

A new company is jumping into the J2EE arena: **PrismTech Corp.**'s new OpenFusion Integration Server suite includes a JMS message server; a transformation server for data mapping and runtime conversion of XML-to-XML, database and middleware messages; and a JNDI-compliant location server, which allows a single client to access Enterprise JavaBeans running on different application servers. The company also previewed an implementation of Sun's Java Data Objects (JDO) specification, which maps persistent objects to relational databases, in its still-under-development OpenFusion JDO server.

Merant's DataDirect released J2EE-compatible JDBC API-based drivers for DB2, SQL Server, Sybase and Oracle, according to Brian Reed, DataDirect's vice president of product management. Reed said Merant's long-term strategy is to provide infrastructure components, and will be offering XML real-time bidirectional connectivity in an upcoming component.

From databases to computational graphics: **Visual Numerics Inc.** has updated its JWave client/server numerical analysis package to work with Java Server Pages. JWave 3.5 also includes new client-side controls that let users expand or zoom images, profile a row or column of data across an image, or interactively rotate 3D charts, according to the company, without requiring a refresh or recomputation of the data on the server. Because of the JSP support, says the company, the client need no longer have its own Java Virtual Machine; the JSP code can deliver the graphics as pure HTML. Available now, a JWave starter kit, which includes a single-user service license and two client developer licenses, costs $8,795.

Also in the graphics market is **Loox Software**, a subsidiary of Engenuity Technology Inc., which has updated its JLoox Visualization Suite to version 2.0. The software provides tools for developing and serving both vector and bit-mapped graphics; the update supports both importing and exporting data in the Scalable Vector Format, as well as an XML grammar for describing two-dimensional graphic scenes. The development kit's pricing starts at $4,950 per seat, and there are no royalty or runtime fees for applications, applets and Java servlets developed with the kit.

An updated database is in the works from **Fresher Information Corp.**, which is offering an early developers' release of Matisse 5.0 for download. Described by the company as the "first that can be termed Object SQL," the database, which runs on FreeBSD, Linux, Solaris and Windows, now contains an XML interface and support for additional multimedia data formats. It also extends the SQL language to incorporate object polymorphism, inheritance and encapsulation, according to the company, which plans to generally release the database this fall.

Finally, as Microsoft's .NET and Java continue to battle for world domination, **Intrinsyc Software Inc.** happily sits between them, bridging the sides with the JaNET distributed object protocol that is a Java implementation of .NET remote invocation protocols, according to Intrinsyc president Neil McDonnell. Two months ago, Intrinsyc released JIntegra, a Java implementation of DCOM that allows access from Java to anything on Microsoft platforms, such as Outlook or PowerPoint, from a device running Java, he said. ▮

DRIVING SPECS

SAN FRANCISCO — Two important developments in the effort for standardization were announced at JavaOne.

Rational Software Corp. and the Java Community Process jointly released the UML/EJB Mapping Specification Request [JSR 26] called "UML Profile for EJB," which defines a standard mapping between the Enterprise JavaBeans architecture and the Unified Modeling Language. UML Profile for EJB targets EJB 1.1 and UML 1.3.

Also, Sun Microsystems Inc. is providing its Java implementation of the Web-Based Enterprise Management (WBEM) standard to WBEMsource, an open-source initiative at http://sourceforge.net/projects/wbemservices. The Java implementation for WBEM under the community initiative is designed to enable faster adoption and accelerate development of other cross-platform implementations of standards-based management infrastructures accessible to all networks. It will focus on the Common Information Model, according to Sun.

—David Rubinstein, with Douglas Finlay

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Mercury Topaz Tests the World

Now using a modular approach, APM suite covers desktop to Web

BY EDWARD J. CORREIA

Mercury Interactive Corp. in mid-June announced an overhaul to its Topaz application performance management solution, transforming it from a monolithic application to a modular one. The company also has released several new modules that broaden its testing reach, which now encompasses everything from the desktop to the World Wide Web.

The new desktop component is the Topaz Observer, a passive agent for Windows computers that monitors a user's activities, tracks CPU and memory usage and measures time spent conducting application tasks such as launch and log-in.

Diane Hagglund, Mercury's director of product marketing, said this method lets developers test their applications from a perspective they would not normally have. "The advantage of this approach is its ability to diagnose problems in the last mile of the user experience," she said, to test things that might be out of the developer's control, such as network communications and performance.

"Simply monitoring servers to see if they are working does not guarantee that the end user is having a good experience," she added, but seeing that it takes 30 seconds for a user to log in might indicate a problem. Hagglund said that to help avoid user paranoia, the agent displays to the client when it is observing and when it is not, and also can be disabled entirely. "That gives users a good comfort level about 'Big Brother' technology," she said.

Also new is the Topaz WeatherMap, which, according to the company, consists of about 100 agents dispersed throughout the world on 19 different Internet provider backbones. By measuring latency of HTTP and FTP requests sent among the agents, Mercury is able to monitor worldwide Internet traffic flow. Data is presented graphically in a browser window, and users can drill down into bottlenecks and extract correlations between Internet performance and application user experience.

According to Ido Sarig, vice president of APM marketing at Mercury (www.mercuryinteractive.com), these two modules combine to provide a powerful diagnostic tool with a few unexpected benefits. "The tool shows whether the problem is in the application, the network, the ISP or the Internet, so if your developers are using something like this, it can avoid finger-pointing."

Topaz modules report their data back to a single module, the Topaz Console for Windows NT/2000, which now includes an improved interface, Hagglund said, adding that through a new API, console users can now import data from other management tools or export to major enterprise systems, including CA Unicenter, HP OpenView and Tivoli.

Monthly pricing for Topaz Console starts at $5,000 for 50 seats; WeatherMap at $200; and Console at $650. All are available now. ▮

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XML Spy Eases XSLT Style Sheet Creation

BY DOUGLAS FINLAY

Altova Inc., formerly known as Icon Information Systems, has released the XML Spy 4.0 XML development program as a new family of products that integrates two new tools, making it easier for less-experienced developers to create XSLT style sheets and XML content. In addition, the company says that XML Spy 4.0 is compliant with the W3C's Final Recommendation of the XML Schema Definition. The new software will be available the second week of July.

"Developers have been waiting for years for a finalized XML Schema because they are not happy with the way DTDs [Document Type Definitions] are," explained Alexander Falk, Altova's (www.altova.com) CEO. Falk said that the new XML Schema would give developers datatypes and open-ended features for defining elements, and added that Spy 4.0 was taking its current support for previous drafts of XML schemas in version 3.5 from the simple schema editing level to the integrated level, "turning XML Spy 4.0 into a line of several different tools."

New is the XML Spy 4.0 XSLT Style Sheet Generator, which takes XML schemas and creates style sheets using drag-and-drop techniques in a visual environment. Also new is a Document Framework, an editor with a Microsoft Word-like interface for creating XML content.

At the same time, XML Schema supports real-time validation. If one department overrides data in a file from another department, the difference is underlined in red to show the discrepancy and that the schema has been violated, he said. It further supports validation against datatypes.

"While we reduce a lot of the complexity of editing for less-experienced developers, we also provide the full capabilities of XML Schema for administrators so they can set up a very convenient working environment for developers," Falk said.

XML Spy now also includes enhanced database connectivity, enabling access through an ODBC driver to automatically convert data to XML Schema on-the-fly, preserving all datatype information and relational information, and then input XML data based on that XML Schema.

Rounding out the product family is an upgraded integrated development environment, which supports the W3C's new XML Schema specification in both the graphical editor and XML parser; a new database schema conversion function, allowing developers to import an entire database schema from any SQL database (through an ODBC or ADOX connection) and convert it into an XML Schema; and improved user-interface customization, for allowing more flexible customization, such as rearranging all menu commands and adding or changing keyboard shortcuts at will.

Pricing for the IDE is $199, for the Document Editor, $199, and for the XSLT Generator, $99. A suite combining all three sells for $399. ▮

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WEBOBJECTS

◂ continued from page 1

Prabhakar described the three basic steps that developers will experience when beginning a project using WebObjects. "The first step is modeling the data," he said, which involves using a drag-and-drop interface and assistants to create an XML-like configuration file that describes the data mapping between the database and object model. "This is a fully dynamic model that can be changed and reused for different databases and applications."

The second step is writing the business logic, which may include rules about how data is handled and how events are triggered. "We provide some help for organizing that information, but obviously that's procedural logic that you have to write yourself. But you just write that piece of that logic, and that's all. There's no scripting code inside your HTML and no server-side scripting involved."

The next stage is page generation, which Prabhakar said takes a template-based approach and uses Apple's Web Components technology, consisting of three files. The first is an HTML file with an additional tag for inserting WebObjects created in the first step. The second is a Java class that handles all the data management, plus navigation and other additional logic.

The third file is created with the WebObjects Builder tool, and consists of mappings between HTML tags and objects, instance variables and methods. "That is just a drag-and-drop process for connecting fields, buttons, instance variables and action methods. Without doing anything else, you get a fully functional three-tier application which can be scaled across multiple machines and multiple instances with a minimum of written code and virtually no generated code."

The multifile approach, Prabhakar said, offers another advantage. "Your Java programmer never needs to touch your HTML, and your Web designer never needs to touch Java code. They interact in this loosely coupled mapping file, and developers can get their jobs done quickly and correctly."

Although the capability to create Web services is not new to the platform, Prabhakar said WebObjects 5 simplifies the process. "People have used WebObjects 4.5 to create Web services, and with WebObjects 5, the Xerces parser and Apache [components of Mac OS X], it's even easier." Since WebObjects provides low-level XML and HTTP services, developers can Web service-enable applications by writing their own high-level abstractions on top of those services. "And because Web services—SOAP and UDDI—are open formats and based on XML, it's easy to create them using WebObjects. And as the standards settle down, we'll make it even easier."

WebObjects 5.0 (www.apple.com/webobjects) is available now for Mac OS X and Windows 2000 development hosts for $699 per developer seat, and includes a deployment server license. A deployment license also is included with every copy of Mac OS X sold, and Apple is offering time-limited copies of the developer tools for free between now and September. According to the company, the deployment server is compatible with any J2SE 1.3 runtime, and has been certified for Mac OS X, Solaris 8 and Windows 2000 servers. ▮

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Open-Source Batik Project Gets Vector Graphics

BY DOUGLAS FINLAY

The Batik 1.0 Java-based open-source toolkit from the Apache Software Foundation's XML Project Batik team now includes the Static Scalable Vector Graphics (SVG) Toolkit, enabling developers to fill in their image shapes with colors, provide transparency effects, and even permit filtering effects such as specifying drop shadows on objects, all with the aim of providing high-quality, high-resolution 2D graphics.

"We are targeted at developers to enable them to add nifty imaging features to their applications," said Vincent Hardy, a co-founder of the Batik team and a senior staff engineer for Sun Microsystems Inc.'s advanced development group.

"SVG is a W3C-recommended specification of an XML syntax for 2D graphics that is implemented in Batik, which itself provides software that understands the XML syntax for viewing or generating 2D images," he continued. The toolkit, released in late May, is available at http://xml.apache.org/batik.

Hardy said that Batik links images in a fashion similar to the way HTML uses hyperlinks to connect parts of a document, but uses graphic links rather than textual ones. "Using a map image of a city, one could zoom into a certain structure on that map, such as a building, and then link it to other buildings in the city as they relate to one another, architecturally or as company-related buildings, for example," he said.

He added that the map could include scripting, for writing pop-up dialog boxes to include textual information with the images.

Among core components of the Batik project that help Java developers manage SVG content is the ability to generate SVG content from any Java application; to view SVG content in a Java application; and to convert vector graphics to other formats, including JPEG, PDF and PNG. ▮

HP

◂ continued from page 1

no charge from www.hpbluestone.com by the end of June.

The framework consists of a large kernel, which contains pluggable services for managing software configuration, logs, package, deployment and security, as well as a JavaBean server and a service registry. Multiple root partitions can contain nested groups of Java applications.

The second announcement was of an enhanced Web server, built on the Core Services Framework, which the company also will be offering free of charge. The HP Internet Server, which Capobianco said will be ready for download this month, contains an HTTP listener/server service as well as a Java Server Pages engine. The next release, he said, also will incorporate the Apache Project's Tomcat servlet engine (http://jakarta.apache.org/tomcat).

According to Capobianco, all of HP's Java software, including its popular OpenView network management suite, is being rewritten to use the Core Services Framework. ▮

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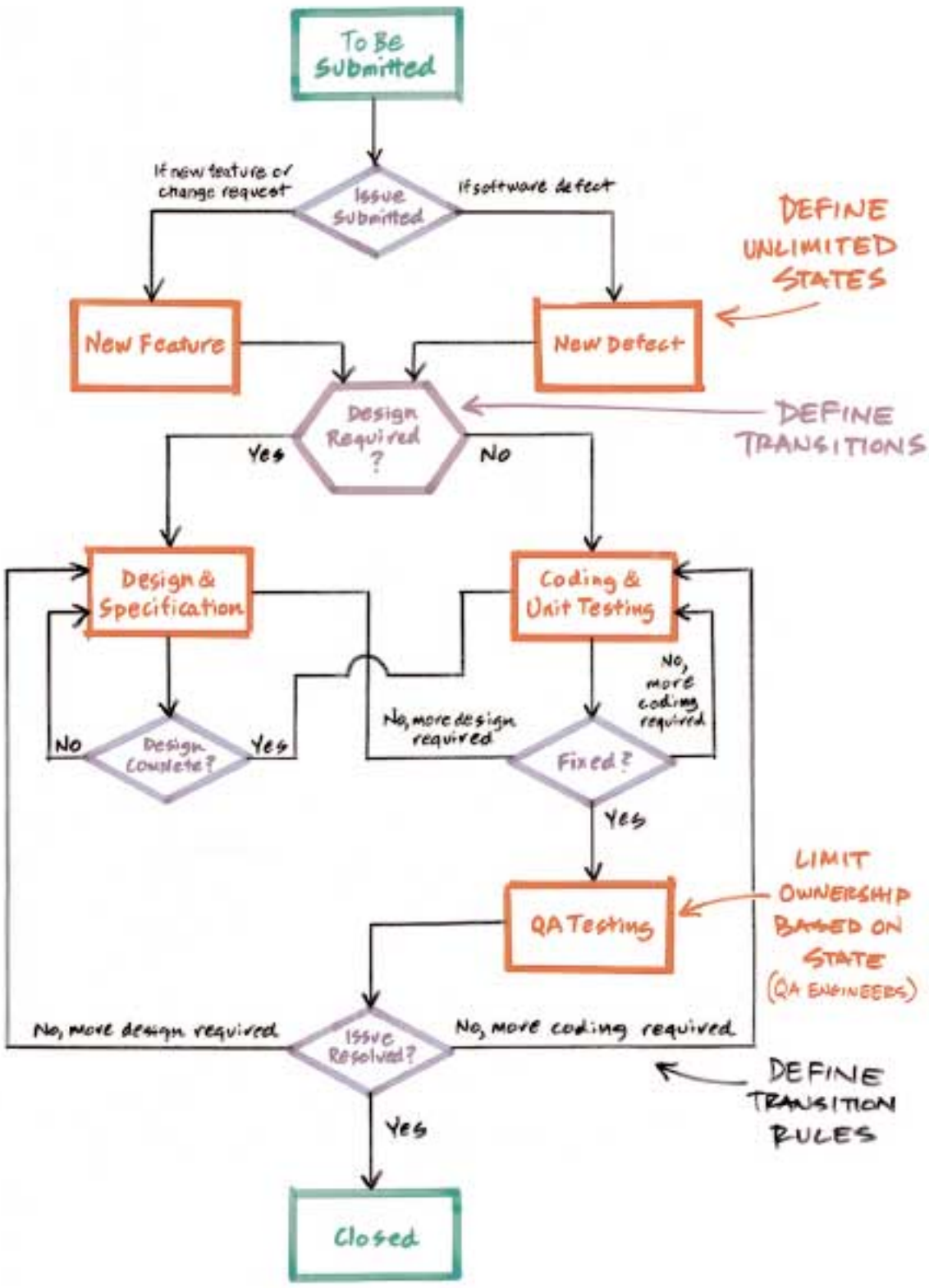

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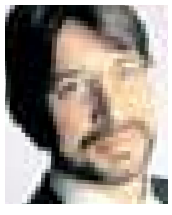
Metrowerks Stakes Its Claim in Wireless Space

CodeWarrior kit to include Java-ready phone, new versions to come

BY EDWARD J. CORREIA

Metrowerks Corp. is going wireless. The embedded tools maker has announced a series of new software and hardware tools designed for building applications for Java-enabled devices, including cell phones, handheld computers and smart cards. The company unveiled its strategy at the JavaOne conference in San Francisco in June.

The cornerstone of its wireless strategy, and the first product to hit the streets, is CodeWarrior for Wireless: Java Development Kit, a kit based on Java 2 Micro Edition for Mac OS and Windows hosts that will include an iDEN i85s Java-enabled cell phone from parent company Motorola. Metrowerks is working on other kits, including one to feature the Motorola Accompli A6288, scheduled for release later this month.



Apps should work across devices and markets, says Metrowerks' Smoulcha.

According to the company, both kits will include the CodeWarrior IDE and all necessary cables and adapters, and will be priced at $1,499 for new users and $1,099 for current CodeWarrior for Java 6.0 users. Metrowerks said it also is working on versions to include handheld computers and other brands of handsets.

John Smoulcha, vice president of marketing at Metrowerks, said that the company's embrace of Java is a key ingredient of its plan for helping developers build devices and applications that interoperate. "Metrowerks' goal is to deliver Java technology-based wireless development tools that work seamlessly across multiple devices."

MORE WIRELESS TOOLS TO COME

In August, Metrowerks is scheduled to ship CodeWarrior for Java Wireless Edition, which it says will build on the capabilities of its CodeWarrior for Java 6.0, the company's PersonalJava and Java 2 Standard Edition development environment that also supports Sun's CLDC and MIDP specifications for creating small-footprint runtimes.

The all-inclusive development kit will ship with target hardware and cables.

The company will add components from third-party embedded developers, including PointBase database components and iSmartGrid Java visualization technology from Eliad.

Smoulcha said that Metrowerks also plans to produce CodeWarrior tools that enable developers to "address the convergence of markets [and] deploy wireless applications and content across markets such as transportation, networking and gaming." To that end, the company plans to ship a gaming edition in September and a "PDA edition" in December.

Metrowerks (www.metrowerks.com) also announced that it would release CodeWarrior for Java Card Platform for beta testing sometime in June. The tools, which are scheduled for release in October, are said to permit developers to build applications for the budding technology targeting government, telecommunications and financial services industries. According to the company, the tools will support card readers from Gemplus, Oberthur and Schlumberger.

There also will soon be a version of CodeWarrior for the Symbian operating system, which according to Metrowerks is part of the mobile device plans of major companies, including Ericsson, Motorola, Nokia and Sony. In August, the company plans to release basic and advanced Java editions of CodeWarrior for Symbian, with support for C/C++ to follow.

Pricing for the unreleased products was not disclosed. ▮

Embedded Market Comes to Fore at JavaOne

Wireless major focus of annual developers' conference

BY EDWARD J. CORREIA

This year's JavaOne conference, held in San Francisco in June, spawned a spate of alliances, Java-enabled hardware and embedded software development tools.

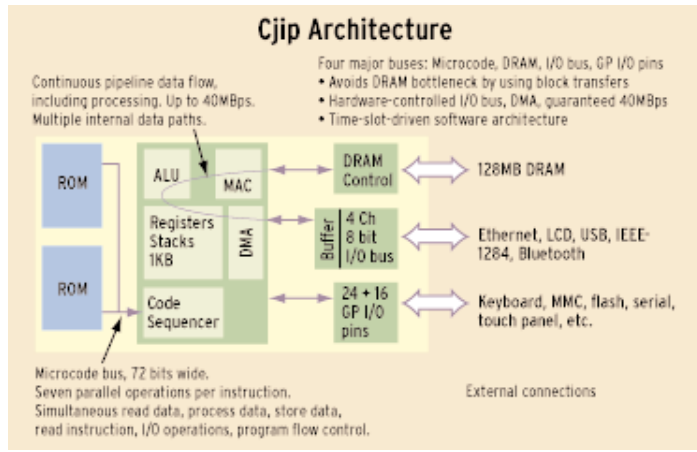
Wireless development was a major part of the show. Helping to set the tone was **Borland Software Corp.**, which revealed its wireless strategy centered around JBuilder 5, its integrated development environment for Java also released at the show.

The company also released JBuilder MobileSet, Nokia Edition, a set of tools for building J2ME-based applications for Nokia's Java-enabled mobile phones that conform to Sun's MIDP specification. JBuilder MobileSet, the first of a series of wireless development tools from Borland that will support various mobile devices, also supports the CLDC specification and includes device emulation and debugging, according to the company. Tools for other hardware are scheduled for release later this year.

JBuilder MobileSet, Nokia Edition includes handset-device emulation and is available now.

Embedded database developer **PointBase Inc.** has aligned with fabless semiconductor company **Imsys AB**, maker of Cjip, a reconfigurable, CLDC/MIDP native Java-enabled processor that the company claims can improve application performance and reduce component count in embedded designs.

Imsys was demonstrating the Cjip running the new Micro Database Engine for J2ME from PointBase, which also released PointBase 4.0, a major update to its embedded product suite that it says provides significant performance and stability improvements. Cjip also can execute C/C++ and assembler code, and is manufactured by Ericsson.


Cjip Architecture
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• Hardware-controlled I/O bus, DMA, guaranteed 40MBps
• Time-slot-driven software architecture
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MAC
Registers Stacks 1KB
DMA
Code Sequencer
DRAM Control
128MB DRAM
Buffer
4 Ch 8 bit I/O bus
Ethernet, LCD, USB, IEEE-1284, Bluetooth
24 + 16 GP I/O pins
Keyboard, MMC, flash, serial, touch panel, etc.
Microcode bus, 72 bits wide.
Seven parallel operations per instruction.
Simultaneous read data, process data, store data, read instruction, I/O operations, program flow control.
External connections

Cjip maker Imsys will integrate PointBase's Micro Database Engine.

Impart Technology Inc. released and was demonstrating its Embedded Communications Broker, a peer-to-peer technology that it claims allows devices of different types to communicate with one another seamlessly using whatever connection method they happen to have in common.

This is accomplished, the company says, by creating a protocol-independent communication abstraction that works across many physical interfaces, including Bluetooth, IrDA, RS-232, USB and Wireless Ethernet (802.11). According to the company, the software consists of a Java .JAR file about 100KB in size, and can be dynamically upgraded to instantly adapt to new protocols.

Switzerland-based Java developer **Softwired Inc.** was demonstrating high-availability enhancements to its iBus family of JMS-based messaging middleware, including failover functionality. The company says that its MessageBus 4.1.1 and Mes-

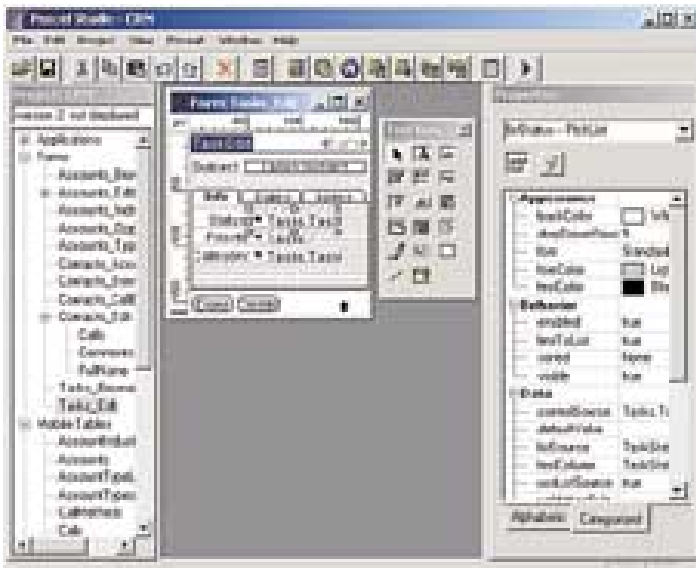
▸ continued on page 34

Pencel Sharpens Palm Developers' Toolbox

BY EDWARD J. CORREIA

Hoping to inscribe its name on your list of must-have development tools for Palm OS, Pencel Corp. has released Kinectivity Studio 1.1, an update to its rapid application development environment that it claims enables enterprise IT staff to assemble mobile applications for database access and synchronization using a forms-based GUI, without requiring specialized development skills.

First introduced in April, the $695 Kinectivity Studio includes a relational database server component for Windows servers that connects with back-end databases via OLE DB and ODBC to manage data flow between Palm devices and enterprise data systems. Version 1.1 now supports bar-code scanners and other input devices on Palm OS-based handhelds. According to the company, the visual suite permits nontechnical designers to construct mobile database applications through the use of configurable building blocks, including those for user interface, data validation, and data exchange and synchronization. The tools also include a scripting environment based on JavaScript.



Forms-based IDE eases Palm OS database application development.

Chris Maloney, Pencel's president and CEO, sees handheld devices as becoming part of today's everyday corporate infrastructure. "To be successfully deployed in business applications, mobile solutions must take advantage of handheld devices while serving as an extension of existing data systems." The system is being targeted at health-care, field sales and service, transportation and warehouse management industries.

Licensing of Kinectivity Studio permits unlimited applications to be created free of runtime royalties. For $1,495, Pencel offers a Windows server component that permits connectivity to remote and wireless devices via the Internet. The company (www.pencel.com) is developing client software for PocketPC and RIM devices and plans to offer real-time capabilities as well. ■

Jeode Gets CE Design Win, Finally

BY EDWARD J. CORREIA

After being on the market for more than a year, Jeode for Windows CE finally has a customer.

Insignia Solutions Inc. has licensed its JeodeRuntime environment to Compaq Computer Corp. for its iPAQ handheld computer. Jeode was first introduced for Windows CE as a plug-in for Internet Explorer 4.0, and is now also compatible with Pocket Internet Explorer for the Pocket PC operating system that is included on the iPAQ. The JeodeRuntime is a Sun-certified JVM that accelerates execution of Java applications using an adaptive compiler. The announcement came at last month's JavaOne conference in San Francisco.

According to Gary Katz, Insignia's senior manager of corporate communications, Jeode was slow to catch on among developers using the Microsoft embedded operating system. "There was just not that much interest in it from the Windows CE device makers." Other companies that have licensed Jeode for embedded designs include Hitachi, Lineo, Siemens, Wind River and Wise. Insignia first released a version for Pocket Explorer in May.

More than a year after its introduction, Compaq licenses Insignia JVM for iPAQ.

Available now, iPAQ users can purchase the JeodeRuntime online for $19.95 at http://compaq.handango.com/JeodeRuntime. According to the company, the download includes the Jeode embedded virtual machine and adaptive compiler; and a set of embedded Java classes that support AWT graphics and the Java Native Interface. Device installation is handled through Microsoft ActiveSync with support for uninstall, the company says. ■

EMBEDDED MARKET

◂ continued from page 33

sageServer 4.1.1 modules are more fully integrated with each other, and enjoy improved memory management and XML message support, plus greater throughput performance.

Meanwhile, **NewMonics Inc.**, which also develops a high-performance JVM, has integrated a generational garbage collector into its PERC 3.2 virtual machine, affording it enterprise-level memory management and as much as a five-fold performance boost, the company claims. According to NewMonics, which mainly targets network communications equipment with its development solutions, the performance improvements do not sacrifice determinism or real-time latency. PERC 3.2 is scheduled for release some time this summer.

ONE BIG, HAPPY JAVA FAMILY

JavaOne also produced its share of partnerships among companies developing wireless technologies. Among them was the **iAnywhere Solutions** subsidiary of Sybase Inc., which has teamed up with **Motorola Inc.**, and will provide a version of its iAnywhere database synchronization client for Motorola's new i85s Java-enabled mobile phone.

The companies were demonstrating the phone running a field response prototype application, which showed the ability to interact with a database of service calls regardless of the phone's wireless connection status. Marty Mallick, iAnywhere's wireless solutions evangelist, said the iAnywhere Java client's data synchronization capability is what "brings the 'always available' aspect down to these phones." The i85s handset is available now; no release date has been set for iAnywhere's software.

Motorola and iAnywhere demonstrated a phone running a prototype database sync application.

iAnywhere also has formed an alliance with Java developer **Kada Systems Inc.**, and will support Kada's Mobile Platform for Java, an environment that Mallick said enables iAnywhere to extend its enterprise database access software to other device platforms more quickly. "Part of the reason that it is taking two or three months to develop for Palm and then for PocketPC is the different languages and tools for these devices," he said. "[Java] allows developers to use the same applications for a variety of different devices, reducing the time to develop and the knowledge required for each particular device."

Mallick said that iAnywhere has tried to develop its software in Java before but has met with performance problems, and that the Kada JVM was the first one robust enough for the job. "It's really the first time we're seeing a virtual machine for these devices that is fast enough to run our enterprise applications," he said, adding that with Kada's high-performance clean-room implementation, "we can now use our synchronization technology to build J2ME applications for Motorola's new J2ME mobile phones."

Zucotto Wireless Inc., which develops Java-enabled processors and processor cores, has joined forces with software venture company **Brightspark Group** to produce a series of applications for devices built using Zucotto's family of Xpresso semiconductors.

The first, to be integrated with Zucotto's WhiteBoard SDK, will be a personal information manager suite featuring calendar, e-mail, task list and contact manager. The suite, which was being demonstrated at the show using a device emulator, also will be able to synchronize with Microsoft Outlook, according to Zucotto.

In addition, the company has aligned with embedded component developer **Smart Fusion** and device maker **Phillips Semiconductor** to create technologies that will combine Java with Bluetooth wireless device connectivity. Their first effort will reportedly use Zucotto's XJB 100 Bluetooth protocol stack and Phillips' Bluetooth baseband technology to implement streaming MP3 capability.

Palm Inc. has joined with **Sun Microsystems Inc.** in the debut of the Java Mobile Information Device Profile for Palm OS 3.5, which together with the Connected Limited Device Configuration permits developers to build runtime environments for Java applications on Palm devices.

The specification, which according to Sun also can be used to target devices from Handspring and Sony, will include a desktop utility for converting MIDlets (applications written to the MIDP specification) to PRC files (Palm OS executables), plus sample MIDlets, documentation and support for HotSync and MIDlet beaming. ■

Growth of Wireless Devices on Display

BY CHRISTINA M. PURPI

With wireless standards still being smoothed out and the embedded industry rapidly maturing, this summer's Wireless DevCon Conference will focus on device proliferation, embedded systems performance, global trends and security.

This year's show is scheduled for July 22 to July 24 at the Hilton New York and Towers, and will be highlighted by five keynote speakers, four conference tracks, beginner and advanced technical sessions and an exhibition floor. The conference is owned and produced by Camelot Communications Corp.

A new track on the latest trends in embedded solutions has been added, joining such topics as "Developing Wireless Applications Using Java Technology" and "Practical Security Measures for Today's Wireless Applications."

The keynote sessions will include such speakers as Lee Wright, director of strategic partnerships at Americas Nokia Inc. and founder of AnywhereYouGo.com; and Jeremy Chone, director of product management and architecture of Oracle Mobile. There will also be a panel hosted by Peter Coffee, technology editor at eWeek, titled: "Wireless Business Models: Real Profits, Real Technologies." Other keynotes have not yet been announced.

Also speaking at the conference will be Sun Microsystems Inc.'s Bill Day on Jini and "Rapid Fire Wireless"; and Lutris Technologies Inc.'s Keith Bigelow on the movements toward WAP versus i-mode versus J2ME.

On Monday, conference attendees can enjoy "A Journey Into the Imagination" with hypnotist James Mapes, who will attempt to take the audience on a trip into the subconscious.

Also featured on the show floor will be the Mobile Computing Pavilion, which will give visitors the opportunity to test the newest mobile devices and attend a wide variety of management sessions.

Vickie Morano, director of the Developers Program at Pinpoint Networks Inc., will explain "How to Monetize Your Wireless Applications" and how to receive distribution on carriers' networks. ■

Wireless DevCon 2001

CONFERENCE: July 22-24
Hilton New York and Towers, New York

CONFERENCE HOURS:
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Monday, 8 a.m.-8:45 p.m.
Tuesday, 8:30 a.m.-7:30 p.m.

EXHIBIT HOURS:
Monday, Noon-6:30 p.m.
Tuesday, Noon-5 p.m.

KEYNOTE SPEAKERS:
Sunday, 1 p.m.-1:45 p.m,
to be announced.

Monday, 11:15 a.m.-Noon, Jeremy Chone, Oracle Mobile.

4:55 p.m.-5:55 p.m., Ericsson keynote speaker to be announced.

Tuesday, 11:15-Noon, Lee Wright, Americas Nokia Inc.

3:20 p.m.-4:15 p.m., Panel: Peter Coffee, eWeek; Eli Rosner, Autodesk Inc.; David Steinberg, Sterling Cellular Inc.; Gus Rasid, Salsa Inc.

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Next stop: ubiquity

Organizing Information Using The Language Of Change

BY LISA NADILE

Simple, easy-to-use databases were thought to have gone the way of paperless offices and macramé. However, XML is slashing away at the complex tools, proprietary technologies and near-impossible integration encountered by database application developers.

The focus is no longer on mapping tables or crafting yet another interface between products. Now it is on creating database applications that tap the ubiquity of the XML language.

"XML is the de facto standard for semistructured information on the Web," said Paul Brown, president and CEO of FiveSight Technologies Inc. (www.fivesight.com), which develops tools for building transaction and workflow applications. "If you're dealing with XML in general, why store it any other way?" asked Brown. "An XML database will make [building projects] a lot easier. XML makes things easier to build, test and modify than a relational database."

XML databases allow a developer to change a schema or metadata, without having to change tables. Normally the tables in a traditional relational database would require changes. In addition, ad hoc queries are impossible, according to Brown.

The key is to decide which database, XML or otherwise, best meets a company's needs. "The relational database is still absolutely the best tool for dealing with tabular data. It will be faster, it will be more intelligent, and it's a very mature technology," he added.

USING XML TO ADVANTAGE

For FiveSight, asynchronous processing support is key for tool developers who are building and deploying messaging applications. The company is planning to use an XML database for use with its XML, JMS, LDAP and Java tools.

Another vendor uses a SQL Server 7.0 database with XML middleware from B-Bop to create a unique interpretation of the content delivery concept. MemeStreams Inc. (www.memestreams.com) builds custom employee performance analysis applications, which track what a user is working on and how that user moves through a system. Then that data is turned into personalization information for creating more intelligent workflow.

According to Ben Trafford, MemeStreams' vice president of product development, B-Bop's Xfinity middleware takes the XML tracking data and sends it to and from the database. The process appears seamless, and Xfinity handles working with the relational database for the developers.

"We can also use XML to talk to CRM and ERP systems, because they all speak XML. It's the lingua franca of the Web," said Trafford.

LEGACY SYSTEMS FACE LIFT

The industry standardization on XML tantalizes those developers looking to

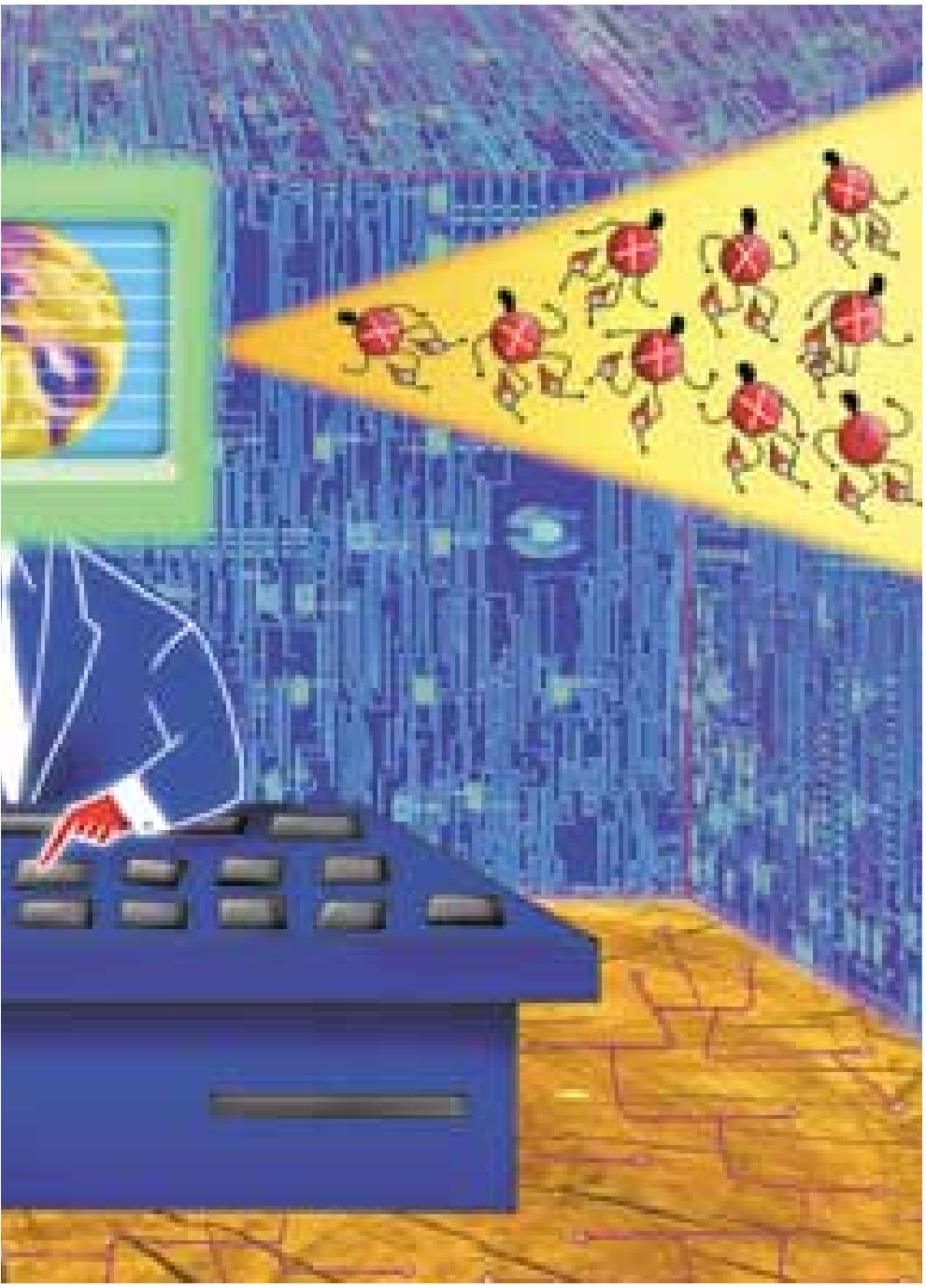
XML DATABASES? NOT YET

Although XML databases are becoming popular, they're not even close to taking over the world, according to a recent report by research firm Intellor Group Inc. The survey, conducted at the Wilshire Meta-Data Conference in early March, shows that 6 percent of the 232 respondents had already implemented a native XML database within their organization, and an additional 6 percent planned to do so within the next year.

By contrast, 11 percent responded that they had implemented XML-enabled databases, and another 21 percent planned to do so within the next year. In this study, an XML-enabled database was defined as a relational or object-oriented database capable of managing the storage of data from XML documents. From this, it could be inferred that the use of a traditional database to store XML content is, at least at present, a more attractive alternative to the use of a native XML database.

The report, available at www.intellor.com/links/?pg=RS5PR, is not conclusive, however, because more than one-third of those surveyed did not know whether their organizations were using native XML or XML-enabled databases—a larger proportion than those who indicated positive adoption.

–Alan Zeichick



overcome the productivity black hole that is their complex legacy database systems.

"Over many years, we've had interfaces with so many different systems and had all the problems associated with that. When XML came up, we thought 'this is perfect.' It merged with all our interfaces," said Lewis Cunningham, chief architect of NDS Systems, an Oracle ERP application developer.

Using JDeveloper with Oracle's XML tools, Cunningham and his staff have added an XML-driven client to their existing applications, giving new life to NDS Systems' legacy architecture. The kit contains an XML SQL utility for generating XML content from Oracle9i, while keeping its existing PLSQL stored procedures.

STICK TO THE BIG THREE

Be realistic—don't expect to build an XML database application without the big three: DOM, SAX and Java, say developers.

"Everyone should be playing with them in some way. Certainly with the commitment of virtually the entire industry to XML, it makes sense," FiveSight's Brown said.

For example, MemeStreams uses Java servlets to present documents to the user. According to Trafford, the company uses them to help power the artificial intelligence of the company's performance systems.

When a user pulls up a page, a JSP drops down to a project and activity history document, which was wrapped in a servlet. The servlet collects new data and uses that information to continually return the correct page, ensuring that it is populated with the correct or personalized information. The new information is added to the history and the personalization analysis continues, he said.

FiveSight also uses the servlet wrapping technique to build similar front ends to queries, said Brown.

X-PLAN

XML is fast becoming known as a language with a very complex acronym farm. However, only by braving the morass can developers create the successful database applications they need.

"What I'm hearing from a lot of software developers who work for me is that using XML cuts development time in half by giving them access to a layer of 'in-direction' between the data and the application, which previously they had to hard-code," Trafford said.

For example, developers use a combination of XML, Extensible Stylesheet Language (XSL) and XLINKS. The XLINKS relate the interrelationships among the bits of user-tracking data to create really powerful metadata, he said.

MemeStreams has implemented 12 of the 15 XML standards, admittedly working with moving targets, but the control gained and the successful outcome achieved are worth any future modifications, according to Trafford.

According to other application developers, creative uses of XSL are clearly necessary for any successful implementation of an XML database's benefits.

Xavier Haurie, an Analog Devices engineer who is building a catalog of semiconductor components as an XML database application, said the effective use of XSL allowed him to complete the project by himself.

"I am using XSL extensively, which is the main advantage. I can present my metadata to the end user very easily, and if I change the schema, I don't have to change my filter or I just have to make incremental changes to my XSL filter."

More important is to carefully plan the XML data application's level of compliance to the current group of APIs, said FiveSight's Brown.

"[Look at the] XPATH and XQL APIs. What sorts of services do they provide? Will the application require XA transactions? The standards provide a long list of everything you'd want from a database in terms of transactionality and data typing," he said.

"Think through the database application's structure," said Brown. "Document Type Definitions versus schemas and namespaces—what really does it support? Is it going to do validation? What will be the serialization and deserialization strategies used? How does that affect the performance of large and small documents?"

The answers to questions such as these will not only define how to construct the application, they'll also help developers gain a clear vision of the project's end result. ▮

XML:DB INITIATIVE POINTS THE WAY

Kimbro Staken, dbXML Group LLC

Kimbro Staken is CTO at dbXML Group LLC (www.dbxml.org), which distributes an open-source XML database. This database is based on the XML:DB Initiative project (www.xmldb.org).

SD Times: What is the XML:DB Initiative?

Kimbro Staken: It is a vendor-neutral XML database community that has created an API for a common access mechanism for XML databases, similar to ODBC or JDBC for relational databases. It gives developers a way to work with multiple XML databases.

The XML:DB is focused on technologies that are usable today and function as stepping stones until we have something official from the W3C.

Why is an open-source XML database needed?

It's actually very critical. XML databases are a new technology. They didn't exist at the most two years ago, and people don't know how they work. Having an open-source database lets people see what it is and play with it without spending any money.

This is also the beginning of a fundamental shift in the way software is being developed. Open source is increasing in popularity and is penetrating into the higher levels of organizations. Many companies are using open source to save themselves money and to speed development.

How should developers begin working with an XML database?

First, you need to look at how much you want to use XML and, alternatively, look at the data you want to store. Once you make that decision, then you need to define what the XML is going to look like and how you're going to store the XML in the database. That's going to depend on the product you've chosen. If you're using a product with a schema, then you have to develop the schema too. The development model is going to be pretty similar to developing a relational database application, except you are already working with a standard, and that is XML itself.

In what way does the XML standard make a difference?

Since XML is the basis for everything that developers are doing with these databases, there is a very strong tendency to stick with standards. So I don't think you'll see quite as many of the proprietary extensions that you see with relational databases.

Your data is XML and is useful directly, which is very different from a relational database where you have to take data out and do something else with it in order for it to be used.

You should have much greater data portability between databases. This is not proven; there's going to be some issues down the road, but since XML is the basis that everybody is using, [that is the direction].

–Lisa Nadile

Tapping Into the Potential of XML

Companies experiment with various implementations of database applications

BY LISA NADILE

One man, an XML database and a few pieces of freeware are playing an important part in a $775 million company's technology evolution.

Analog Devices Inc. (www.analogdevices.com), a semiconductor-manufacturing giant, is one of the many gigantic firms that have embraced the XML language. The Norwood, Mass., company is six months into a yearlong, half-million-dollar project to build a state-of-the-art XML infrastructure.

However, Xavier Hautie, an engineer with Analog's system-level software development group, was already creating his own XML database applications, and he is quietly changing the way engineers work in his own modest epicenter at the company's Wilmington, Mass., office.

The engineer has just moved from chip design to software development after building an intranet catalog of circuit designs for 1,250 of his fellow engineers. The compact project runs on XYZFind Corp.'s self-named native XML database.

"Very often the engineers ask if somebody has created a similar design, so I'm trying to catalog those objects. I'm not trying to centralize those objects themselves; this is just metadata about them, because those objects—those designs—are huge," Hautie said. The data itself consists of documents, schematics, layout views and CAD files.

According to Hautie, the key to the catalog's future is that, despite its comparatively small achievement when next to Analog's XML plans, it will easily fit into the architecture under construction because of the common denominator of the language, and he'll be able to rapidly expand its capabilities.

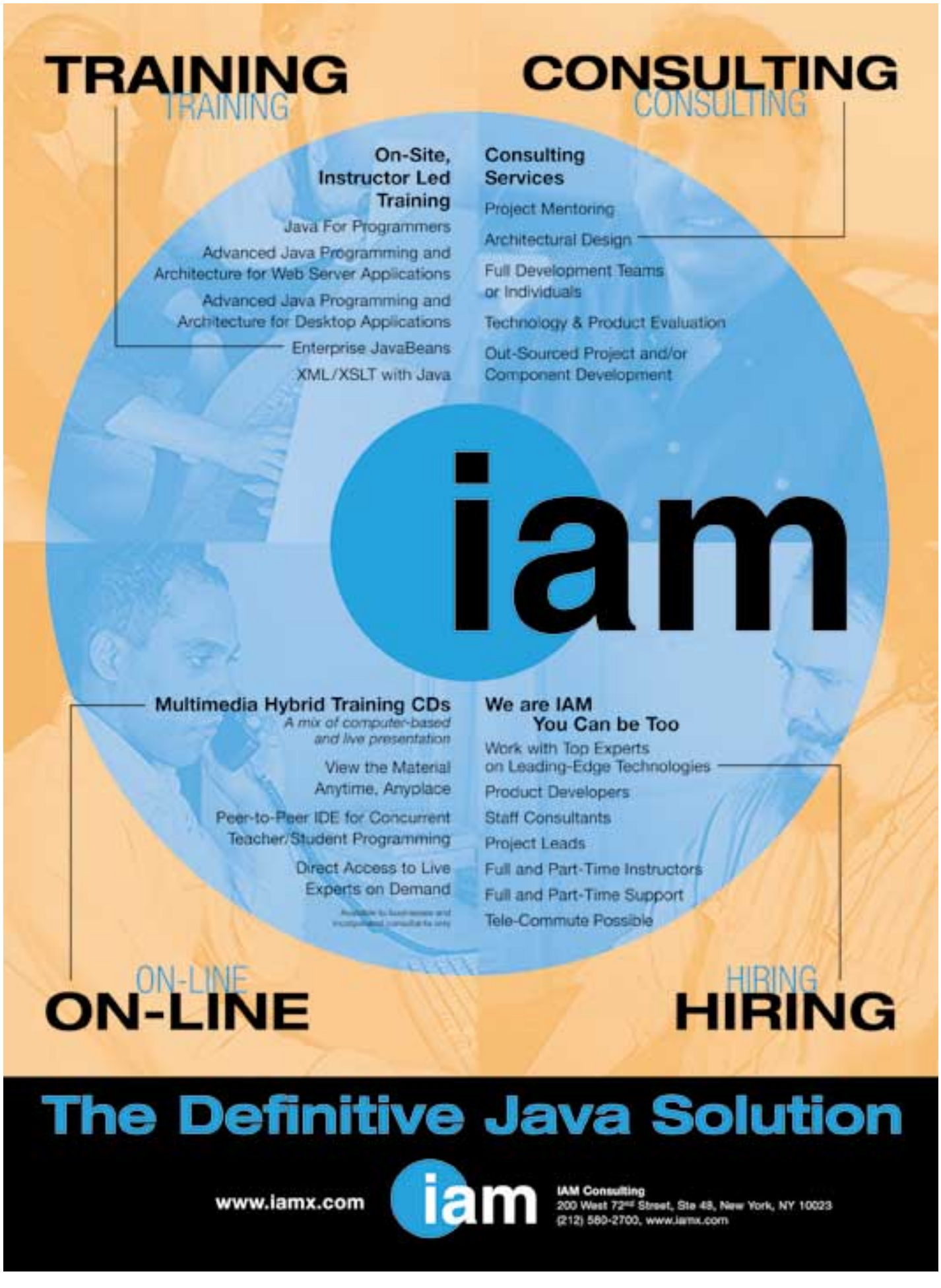
Using an HTML form, engineers define the profile of an integrated circuit; other engineers can then use this profile to identify and locate components or data for reuse.

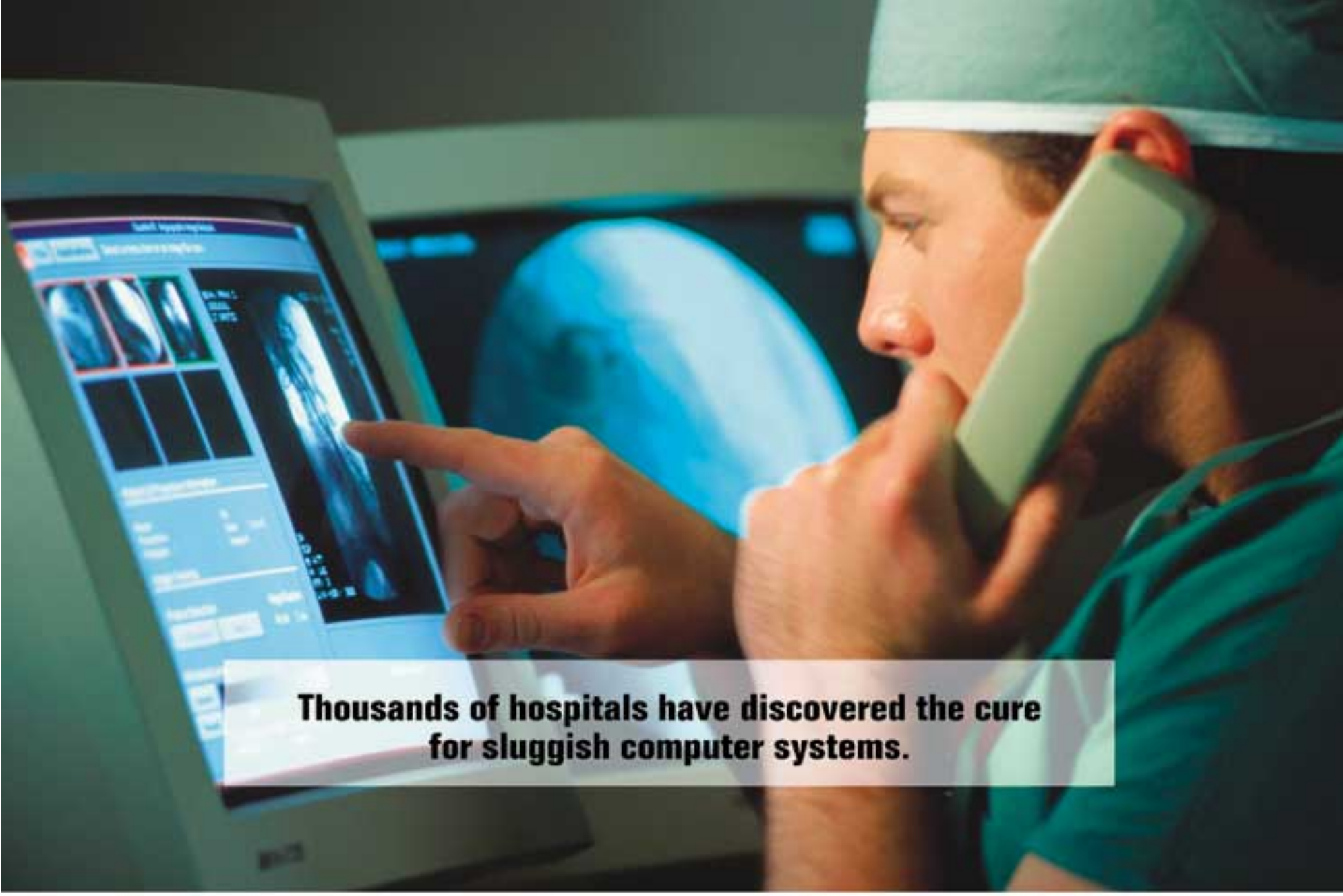
According to Hautie, if he were working with a relational database, what took him weeks would take months instead. In fact, he said that in the time it would take for him to create a plan suitable to convince his manager to use a relational database, he could actually develop a workable solution using an XML database instead.

Another developer working with XML databases agreed. "How do you demo an XML database? 'Look, it stores my data?' It's a hard thing to evaluate," said Paul Brown, president and CEO of FiveSight Technologies Inc. (www.fivesight.com).

The Chicago-based company develops tools based on XML, JMS and LDAP for rapidly constructing and deploying message-driven appli-

▸ continued on page 40





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TAPPING XML

◂ continued from page 38

cations. Its primary markets are that of transaction processing and custom development of workflow and business processes.

Brown is evaluating XML databases from Ipedo Inc. and others to help build these applications. For FiveSight, adding an XML database isn't a new effort sparked by a good idea, it's merely a natural progression of a maturing technology.

"We manipulate EDI files and HL7 documents (Health Care Level 7 data interchange standard), and our whole platform is XML," he said.

FiveSight's model isn't all that different from Hautie's catalog, except for the emphasis on transaction processes, he said. Most important, the flexible access to content is what drew the company to XML databases. "We're building applications in which we need multiple events to occur. This is very common in reporting, rollup and workflow applications," he said.

One example is the accounts payable process in a hospital. When an auto-generated retrospective of a patient's stay in a hospital is needed for an invoice, a database must support custom-designed procedures.

According to Brown, this begins when an application calls for the delivery of an invoice. That request is dispatched as an event with certain conditions attached. One of those is the requirement that a specific set of approvals be met by the document components before they can be drawn together into one. Only when those approvals are given can the XML data form an invoice and be submitted to accounts payable.

There are always extremes to balance the simple version of things, and Veridian Corp. (www.veridian.com) exemplifies the granddaddy of all XML projects. The Arlington, Va.-based knowledge management integrator builds analytical applications for the space, defense and intelligence industries.

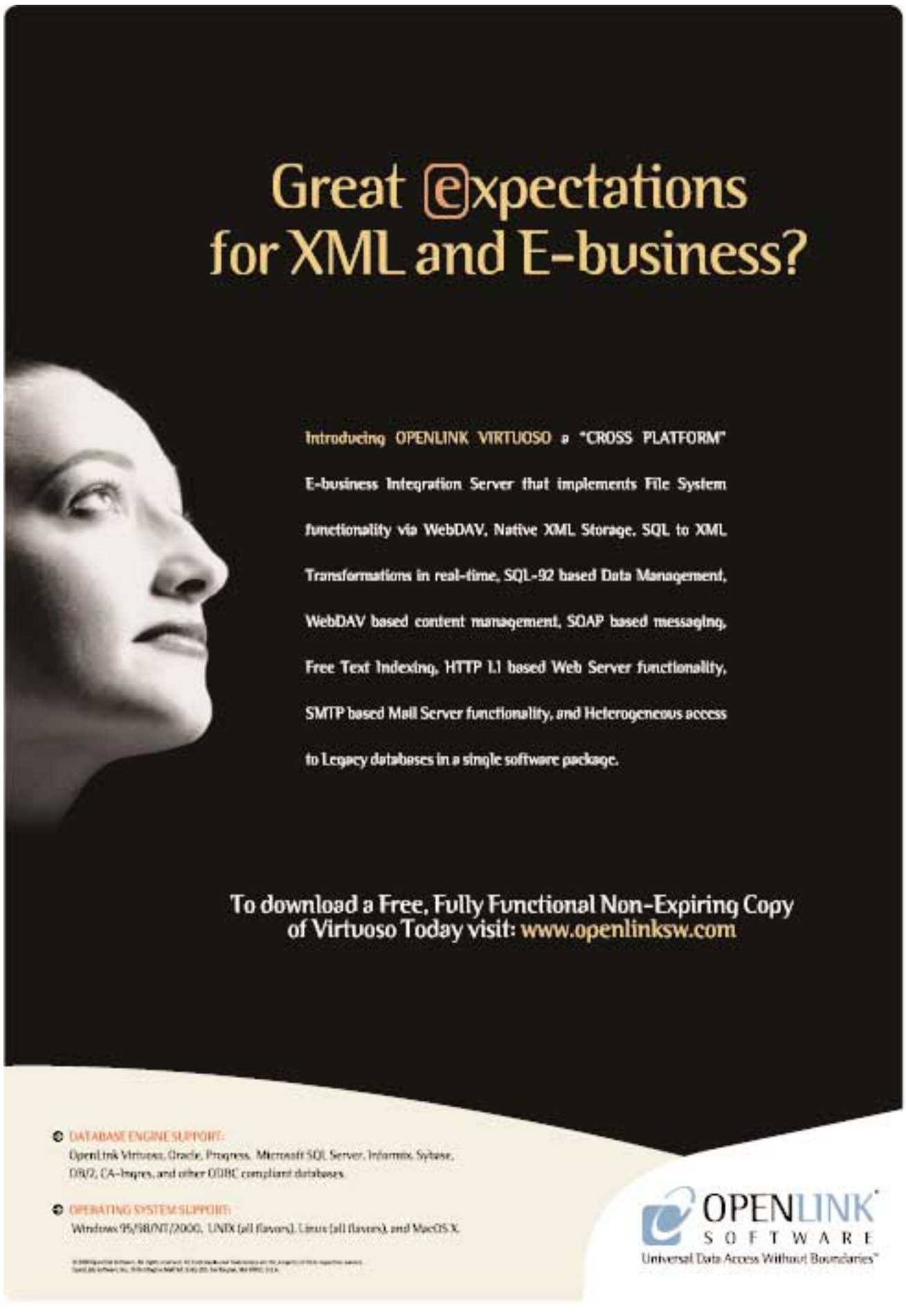
Veridian is designing a process that gives the USAF E-3 Sentry airborne warning and control system a set of queryable XML-based product manuals—which is a first for any weapons system.

The project sounds similar to Analog Device's parts catalog, until the Air Force explains that it needs to convert large database servers of SGML documents, replete with thousands of pages and illustrations, into browser-ready XML.

According to Scott Crawford, a software engineer at Veridian, to even begin this process, the military's proprietary tools will fuel the conversion to XML. However, this fall, Veridian will combine IxiaSoft's TextML database with the Air Force's latest blockbuster search technology to bring real-time online search to the entire Sentry XML repository. The TextML will be used to index the free-text and semantic XML content, which will eliminate the current 1,000-page search limitation.

The result is the rapid conversion of legacy database applications into Internet-accessible Web services, said Crawford.

What is the commonality of these three diverse efforts? Regardless of the size of the project, all three examples combine XML, DOM and other XML APIs with Java servlets to achieve a common goal: to stop planning and just make the project work. ▮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Crossworlds at Hub of Integration

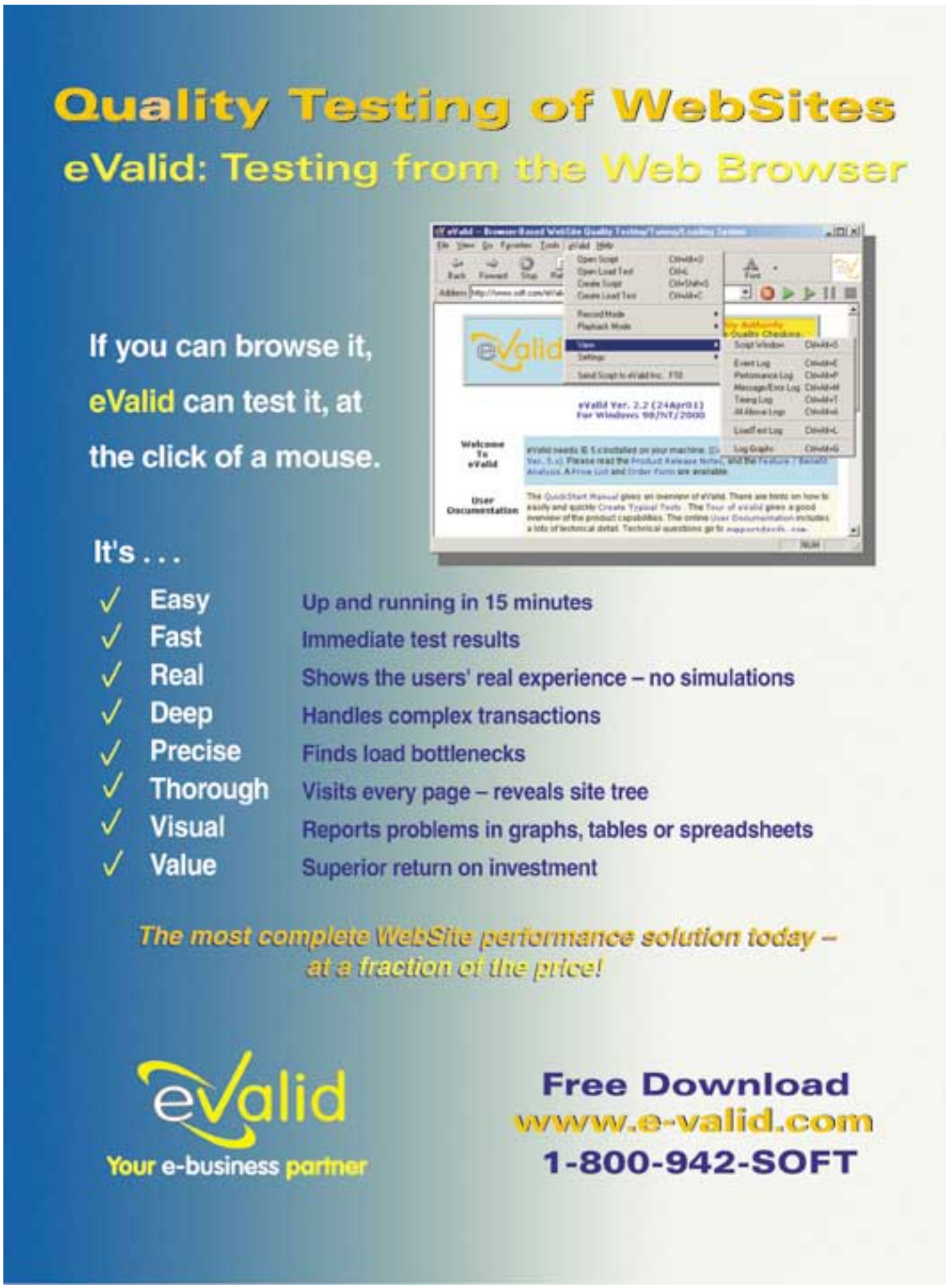
BY DAVID RUBINSTEIN

Eschewing point-to-point connectivity for a hub-and-spoke model, Crossworlds Software Inc. is releasing a Business Integration Management System of modules and tools that it says provides a single platform to manage information and business processes.

Other integration solutions involve a server-based environment but remain point-to-point because the intelligence is largely in the connection points, with the intelligence having to be replicated for each connection, according to Crossworlds' CEO Fred Amoroso. The Crossworlds (http://crossworlds.com) solution provides one connection to each application and works on a publish-and-subscribe methodology, keeping the applications isolated from one another, he explained. This allows developers to replace applications and connectors without having to touch anything else in the integration, Amoroso said.

Under the integration system, generic business objects such as "customer" and "financial" are created, he explained, that use connector agents to pass information between applications, with the business logic residing on the server. There are more than 70 business logic templates in the system, Amoroso said. This allows applications that have different definitions for the above terms to interact via keys that can be understood between the applications. "This eliminates all that spaghetti code," Amoroso said. "We manage intelligence on the server through a business-process module that is essentially a UML diagram."

Among the modules and tools within the system are a process designer for the creation of the UML diagrams for business processes, a Connector Development Kit or Java CDK to provide connectivity to legacy databases, drag-and-drop capability for mapping from source objects to destination objects that is compiled to executable Java code, and a multithreaded systems management console that provides a look at all queues for a view of what's occurring within the system, Amoroso said. A key feature, he added, is answer-back capability that guarantees transaction delivery. If there is a failure in a transaction, the system rolls back to the beginning of the transaction and spits the transaction to a failed-events queue while sending e-mail notifications of the problem. ▮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TALARIAN OFFERS WORKBENCH FOR JMS

BY DOUGLAS FINLAY

Talarian Corp.'s new Workbench for JMS, enterprise edition is a J2EE-compliant message queue server that offers publish-and-subscribe queuing, and reliable multicast message queuing, according to the company.

Workbench for JMS is based on Talarian's SmartSockets messaging engine and SmartMQ queue, the $40,000-per-server software offers fault tolerance and dynamic routing architecture, plus SSL security via encryption and tunneling, according to the company (www.talarian.com/wb4jms). In addition to Java, it includes C and C++ programming interfaces. ▮

Large-Scale Component Development Gets a Push

ComponentSource serves best practices, automation

BY DAVID RUBINSTEIN

The typical approach to component reuse has been to set up a repository, throw in some code chunks, and hope people can find a way to work the pieces into new applications. There has not been a wide commitment to this development practice.

ComponentSource (www.componentsource.com) is taking a more aggressive approach, creating Enterprise Reuse Solutions, a service that takes a behavioral approach to component development by providing training, assets and automation that will allow enterprisewide reuse across multiple locations, according to CEO Sam Patterson.

"We will take someone who doesn't understand [component reuse] and teach them from the ground up," he said. "This is not a drop-in product; it's a much broader approach to the issue."

Enterprise Reuse Solutions (ERS) starts with on-site training with a set of best practices that fit into existing development processes such as the Rational Unified Process, and helps organizations establish collaboration and incentive plans for the creation of reusable components. Access to ComponentSource's repository of 6,500 components also is provided, as well as automation of the process, which can be customized for companies looking to build private marketplaces for the swapping or selling of components between corporate divisions, Patterson said.

A company would file a component request either internally or to ComponentSource's pool of component developers, who then would build the component for the company to publish either internally or externally, Patterson explained. The use of Web services protocols such as XML and SOAP enables large organizations to distribute the components across diverse platforms and operating systems, he added.

ERS can help companies take advantage of the large pool of authors writing components for the .NET and J2EE platforms. Development of EJBs has slowed somewhat, Patterson acknowledged, as developers await the finalized EJB 2.0 specification from Sun's Java Community Process executive committee. ▮

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EDITORIALS

A Slowing Java Pace

The JavaOne conference, held by Sun Microsystems Inc. in early June, was a hustling, bustling affair. From the swelling crowds at the keynote speeches, to row upon row of nearly identical displays at the exhibit hall, JavaOne was the year's premier event for showcasing Sun's development and deployment platform.

In fact, there was almost as much enthusiasm as at the previous two years' events. But not quite.

In 1999, the JavaOne conference saw the redefinition of Java to encompass a vision of an embedded Java 2 Micro Edition, a free-for-everyone Standard Edition and a distributed Enterprise Edition.

Last year's JavaOne was a landmark event, where Sun delivered its J2SE and J2EE on Linux. Java gained its first support for XML. The widely criticized Java Community Process was publicly overhauled.

This year, those swelling crowds seemed tired and directionless, though this may have been due to the focus on J2ME and the wireless space (which many developers stated simply didn't apply to them), the depressed high-tech economy or the lack of stop-the-presses news from Sun and the JCP. Or maybe the market is maturing beyond its base of rabid anti-Microsoft early adopters.

We would argue that the lack of a revolutionary set of new APIs or a drastic change of direction is a positive sign, because Java has been expanding too fast, too far.

Over the past 24 months, Java has taken on distributed computing, wireless handsets, core telephony, caching, content syndication, portals, multimedia, gaming, client-side, server-side, applets, servlets, beans, server pages, process modeling and peer-to-peer computing. Coming soon: J2EE 1.3, EJB 2.0 and with J2EE 1.4, Web services. Currently there are 136 JCP Java Specification Requests, and more on the way.

New technologies and APIs are being built before developers have had sufficient opportunity to build, deploy and maintain production systems using the current ones. If the pace of change slows, the community will have the opportunity to master Java 2 technology, and thereby provide useful feedback about which new technologies are really needed, and how they should work.

Oracle on Deck

Oracle is a mighty player in databases, customer-relationship management, enterprise-resource planning, supply-chain automation and data warehousing. But the software giant was late to market with application servers. The first offering only appeared in October 2000, and it was neither fully buzzword compliant nor widely applauded in the Java market.

That may change. The latest Oracle9i app server has passed Sun's J2EE certification tests. Oracle says it's ready to take on the reigning champions, touting its performance, smaller footprint and tight database integration.

Oracle9i AS is unlikely to crush the biggest competitors: it's expensive, and the other players have a huge head start. But more important is the question of intent. Is Oracle truly reinventing itself as a purveyor of Java-based development tools and app servers—or is this merely a scheme designed to help Oracle push its core database software? As yet, nobody knows. ▮

GUEST VIEW

A CAUTIONARY TALE

There was a time when computers filled air-conditioned rooms, big programs contained a thousand lines of FORTRAN code, and big datasets contained a few thousand observations. Researchers and developers mostly wrote their own analytical routines and could often validate the results of their work with a calculator and paper. In just the past few years, the computers on our desks (and laps) have become many times more powerful than those early behemoths. Many of us write high-level programs in desktop environments like MATLAB, Maple and Mathematica. Many also write source-code programs in C/C++, FORTRAN, Java and Visual Basic, calling numerical and statistical software components written by others.

These changes have brought tremendous increases in productivity for scientists, engineers, financial analysts and others. Conventional wisdom would suggest that we are finally seeing the fruits of many years of labor in hardware and software design. So it would probably surprise some that there are dark clouds in this otherwise sunny sky.

The root of concern is threefold: Basic mathematical operations can test the limits of even today's powerful systems; insufficiently robust code can crank out nonsensical answers; and lack of uniform standards across computer platforms can produce differing results even with the same code.

Round-off errors. Consider the problem, for example, of round-off errors. A computer, *any* computer, can retain only a finite number of significant digits to represent the result of an operation. If a result cannot be expressed exactly, a round-off error is introduced. For a simple example, think of 2 divided by 3. Each time we produce a result that cannot be exactly represented and combine it with other results, we accumulate further errors. For another example, suppose that a part of your application sums a sequence of positive numbers. The numbers may be presented in ascending order of magnitude, descending order or in arbitrary order. Because finite machine arithmetic is not associative, $(1 + x) + x$ is not necessarily equal to $1 + (x + x)$, if x is sufficiently small. You may get 1 as the answer, or you may not, and the order in which you add things can determine the outcome. With small datasets or simple applications, the effect of the errors induced would hardly be noticeable, but they can lead to suboptimal decisions and significant financial consequences in other cases.

ROB MEYER

(Un)graceful failures. Another area of potential problems can crop up even when round-off errors are not an issue. Many of the component routines used by developers to add sophisticated functions to applications can be tripped up by data that is outside the conditions anticipated by the writer of the component routine. When this occurs, at least three things can happen: The component routine fails gracefully providing a message to help diagnose the problem; the routine can fail ungracefully with system-error codes that obscure the real problem; and finally, and perhaps worst, the routine can produce a computed result that is nonsensical and the application proceeds as if the results were correct. If the application is simple and the dataset is modest, the results can be validated by other methods. Increasingly, however, today's sophisticated analytical applications are valuable because they handle complex models with massive datasets.

Low-level trouble. Increasingly, an application is developed on one hardware/operating system platform with the intent that it is run on two or more other platforms in order to reach all of the users/customers. Analytical routines called by the developer may execute with seemingly minor variations on different platforms due to lower-level code provided by the platform manufacturer's software engineers. This can produce results similar to the first example of rounding errors above. In practical user terms, the same application, using the same data, can produce different results on different platforms.

What should you do?

Be skeptical. The first defense is to adopt a skeptical attitude toward numerical results until you can verify them by independent methods. In our development, we build in error-handling methods to detect and report errors; we develop stringent test strings to find the operational boundaries of our code; we do peer review of new code to gain an independent review for robustness and accuracy; and we frequently talk with developers who use the code in their particular applications on a variety of platforms. You may wish to do the same.

Research the method. Whether you choose to write your own numerical routines, use noncommercial ones or incorporate commercial library routines within your application, it is worth your while to do some research on the algorithm used in the code. Some code may be based upon older, out-dated methods that are susceptible to computational errors or methods that may not scale well to larger datasets.

Write the documentation. As basic as it may seem, good documentation is critical to a long-lived analytical application. When problems ultimately arise, good documentation of the individual algorithms and the application is critical to helping the original developer (or one who inherits the application) diagnose and fix problems. The absence of documentation can lengthen the time to repair a problem and result in fixes that ultimately create more problems.

Plan for (and test) multiple platforms. Few applications today run only under a single hardware/operating-system platform. The lack of standards for how basic computations are carried out on different platforms means that the same application can produce somewhat different results on different platforms. Good practice requires the development of rigorous test

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Rob Meyer is executive vice president of the Numerical Algorithms Group (NAG). Reach him at rob@nag.com.

GUEST VIEW

IS XML'S FLEXIBILITY A WEAKNESS?

As XML becomes widely adopted, enterprises are developing and implementing several vertical XML flavors. XML offers tremendous capabilities for building state-of-the-art business solutions. The question then becomes: How can developers exploit XML in its full strength?

Paradoxically (or not?), the variety of possibilities that XML offers becomes its weakness.

In the era preceding XML, data collections persisted on the global network in the form of unrelated HTML pages. The only way to access the data was to view the pages with browsers. This resembles viewing microfiche film, which contains pictures of the data but not the data itself. In order to be extracted, data should be presented in a predefined format. Such a presentation gravely limits its usefulness. Regrettably, these HTML collections are generally unprocessable, i.e., there is no way to provide universal software for extracting data from HTML pages.

DMEETRY RAIZMAN

Regarding the next cyberspace development, Tim Berners-Lee, the man behind the World Wide Web, states: "The resulting slimmed-down XML shifted the focus away from formatting and onto content." By providing a means of separating actual data from the presentation of that data, XML offers an indispensable common foundation for extraction of data from heterogeneous structured data sources. XML allows documents to be obtainable and viewable in a contextually aggregated form. Thus, XML is an essential aspect in the new circumstances.

Evolving the XML escalation process, developers commonly face dilemmas such as defining business objects' property either as an attribute or as an element; considering attribute versus #PCDATA; whether to make use of IDREF; and defining an element either as a "Choice of..." or as a "Sequence of...."

Instead of concentrating their efforts on business content and logic, developers have to be aware of each one of XML's nuts and bolts. Although the new XML Schema improves XML as an infrastructure, it also causes even greater challenges for developers of business applications.

Developers would like to be much less aware of "how" to program a feature than "what" to implement. They would appreciate dealing with business objects rather than XML's elements and attributes. They would prefer to work with a visual XML modeling tool and engage in painless XML application prototyping instead of paying with every change in XML descriptor.

Appropriate XML-enabled toolboxes that are suited for the mindset of a business application developer become vital for this challenge. They are a key to the next-generation Web. However, tools to build, test and deploy business XML applications are still in short supply. ■

Dmeetry Raizman is a Java practitioner developing a framework for prototyping and testing of industry-specific XML derivatives. Reach him at dmeetry@maximel.com.

LETTERS TO THE EDITOR

POSTER CHILD

Just a few comments about the recent Rogue Wave article in the current issue of SD Times ["Rogue Wave Emphasizes Consulting," June 1, page 1].

First off, Rogue Wave did not move any developers to Oregon or Colorado. In fact, *all development* of Stingray products has halted. Why? Because the entire development staff—the only people who know anything about Windows and GUI development—was laid off. Rogue Wave itself has no knowledge or experience in the Windows world. All relationships with Microsoft were those of the individuals of Stingray. Rogue Wave has basically destroyed the value of any Stingray product, being that there is no future development plan for the current offerings.

And what of .NET? Again, Rogue Wave is in the dark and without a clue. Stingray was well ahead of the curve when it came to .NET and was well aware of the market potential in that space.

Well, so much for that. Rogue Wave should have made a smarter move for their investors and sold off Stingray rather than ensure the entire demise of the division—a profitable division at that. I wonder how Rogue Wave can file the information they do to the SEC, but we made our numbers. Not only did Stingray make the numbers, but we did so with no support from Rogue Wave. No marketing, no third-party channels—most of the time we had to fight to release a new product or to upgrade our current offerings.

Since Rogue Wave has not produced anything new in several years, we must have confused them by wanting to improve our products to meet customer requests. Something Rogue Wave has not been able to do themselves.

All it would take on your part is to do a little digging around and you'll find that Rogue Wave is lost with no future and very upset customers. They serve as the poster child for poor management in the technology sector.

Richard Weeks
(Former employee of Rogue Wave)

PERFORMANCE ISSUES

In Andrew Binstock's column on Java execution speed ["Java's Achilles' Heel Persists," June 1, page 51], he said: "On the server side, however, the performance penalty paid for Java's portability is starting to take an appreciable toll."

Does he know how to write optimized code? Has he ever written a server app?

He should do that before he starts complaining that Java is slow.

Perhaps this whole article is a subtle exercise to plug away at Microsoft's C# and .NET?

Prashant Soni
Prithvitech Consultants

JITS PERFORM

Yikes! This is a pretty uninformed column ["Java's Achilles' Heel Persists," June 1, page 51]. Native compilers are interesting, but they only really help the start-up of an application (the first few minutes). In reality, JITs have a severe performance advantage over static compilers.

Take a simple virtual function call, which appears polymorphic to the static compiler; the JIT can notice that this is really monomorphic, inline the call, optimize and then put a slow path in that will back out of this assumption if it becomes polymorphic.

If static compilers did that to every polymorphic code site, there would be code explosion; the JIT can do this because it gathers profile data while it starts up. This is just one advantage.

Java may be slow in certain cases, but we've seen C++ speeds on a number of applications, and we've even beaten 'em now and then.

Timothy Cramer
Sun Microsystems Inc.

FACTS, NOT 'MAYBES'

In his column ["Java's Achilles' Heel Persists," June 1, page 51], Andrew Binstock states: "If Java is reduced to a language rather than the whole Java environment, the war with Microsoft tilts decidedly toward Redmond. However, I think Sun's hand will be forced on this issue by .NET and C#. The two advantages these products have over Java are performance and the ability to support multiple languages."

But this is simply not true!

At http://grunge.cs.tu-berlin.de/~tolk/vmlanguages.html, there is a list of supported languages that produce bytecode (a valid Java class) and will run seamlessly on a Java VM for years.

The author said that .NET got more performance than Java. But what is he talking about? .NET is not even in final version, and early tests on beta prove that .NET is 20 to 30 times slower than Java!!! (I did not talk about stability, which is a great issue of .NET....) Maybe in two or three years, .NET will own its "JIT" feature, but at this time, there are none.

This articles deals with "maybe" and not with facts. Next time try to do a more precise job and not simply cut-and-paste Microsoft advertisements and announcements on Microsoft .NET.

Jean-Baptiste Bugeaud
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PUTTING THE MICRO IN MICROPAYMENTS

I live by selling letters. Mostly, I custom tailor my letters to the needs of a customer and a compiler, but several times per month I sit and write English. Like all writers, I cling to the hope that there's more value to my writing beyond providing a chaste separation between advertisements. Ever since reading Courtney Love's brilliant indictment of the music industry (www.hole.com/speech) in which she introduced the meme of the Web as a medium of tips (as opposed to payments), I had been thinking of building a "tip me" service for my own writing and, I imagined, for open-source projects.

The great thing about thinking of micropayments as tips is that it frees you from obsessing over compliance. If you think of the quarters rolling in as tolls that must be collected, you need gates, tollbooths and cops; if you think of them as tips, you worry about providing decent service. So in February, when Amazon.com announced its honor system—a micropayment system using its "one click shopping" technology—I was among the first to sign up.

In the future, everyone will be in the top 15 of some Internet search (let that be my epitaph). The phrase "Java game programming" appears to be my destiny, and my Web site gets a regular stream of people interested in the code and lectures I released subsequent to developing the first framework for Java-based, massive multiuser gaming (and going bankrupt in the days just prior to the dot-com gold rush). A popular resource is a 200-page, 7MB Acrobat file of slides and source code from various courses I taught. A very steady rate of 30 to 40 people per day had been downloading this file; it seemed a natural entree to the world of busking.

The results have been, shall we say, less than encouraging.

Using the Amazon honor system itself is very simple; all one has to do is navigate a series of easy-to-use Web pages to enter your bank information, what you are selling and so on. After signing up, I decorated the download page with two copies of the honor system nag box. I asked for $2 for the 200 pages' worth of slides, articles and source code (including source for some pretty good stuff, like mixed language graphics, examples of java3d in action and a blackboard AI system).

Shortly thereafter, I started to receive requests for free access from students, often from countries other than the U.S., claiming poverty. I'm as much a sucker for politeness as anyone born before 1980, and so I rewrote the page to more clearly state that the payments were desired but unnecessary. A month later, when I had received less than $6 in payments, I rewrote the page again, this time stating that those who paid would receive the file at full bandwidth, while those who didn't would have their download "throttled," so that it would take two hours to download. Surely this was enough incentive for all but the truly impoverished!

Three months later, the grand take from my microtip-based adventure has been less than $20. The handouts are downloaded about half as frequently as they were previously. Another download also is available on the page, but because it doesn't have any tipping associated with it, this file has skyrocketed in popularity, as if my visitors want to download something, anything, which may have something to do with game programming.

"Well, that's the problem," you say. "People surfing the Web for Java game code are kids, unwilling to pay for anything." But while they may be enthusiasts pursuing an idle interest, game programming is traditionally a surprisingly lucrative writing subgenre. Worse, if my experience is in any way representative, it damns the fundamental premise of all micropayment systems that value can be established rationally in low-cost transactions: that if price and payment effort are low enough, people will spend a dime or a quarter or two bucks to receive something of small-but-perceptible value, like source code or lecture slides. My experience shakes my faith in that belief.

Two hundred people per day spend enough effort to search for and find "Java game programming" on search engines and click through to my page. A quarter of them will download a 7MB file if it's free. If there's a $2 fee associated with that file, 50 percent will spend two hours downloading the file for free, and 50 percent will go elsewhere. The 0.03 percent (as in, 1/30th of 1 percent) that pay are statistically insignificant. And so too, I am afraid, are the chances of making any money off micropayments. ▮

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THE CODE SNOB FACTOR

Despite the .NET hoopla, when it comes to Web application development, Microsoft still gets the short end of the stick. Mention Redmond to a group of Web application developers, and you're likely to get a howl of anti-fascist protests, .NET or not. But as a dark Robert De Niro character once said, "It's a toolbox. You put the right tool into the job." Who makes the tool shouldn't matter, only its applicability to the job at hand. What has gotten me for a while now is that even technology managers who embrace this perspective still often shun the bytes from Redmond.

Of course, Microsoft hasn't made it easy for developers to find and use the right tools historically, but it seemed to me that at least they were starting to try. I've heard very few complaints over the years about Microsoft's Visual Studio family of IDEs per se. In fact, most folks seem to find them downright usable. Even Visual J++ recently did very well when some pals and I were comparing Java environments. Not only was it the cheapest of the bunch, it was actually surprisingly flexible—too bad they had to build it on Java technology that was at least a generation old. This is where the politics of Microsoft's feud with Sun overlapped with technology to the product's detriment. Exactly the kind of techno-political prejudice that Redmond claims .NET will conquer.

I recently proffered this viewpoint over some brewskies with a few buddies who must have defined the phrase "code snob." There are few Microsoft sympathizers in this bunch, but then again few Sun evangelists either, so it was a good opportunity to get to the bottom of it all. These guys are still employed, facing tight deliverables, and they don't have time for politics. Just the bunch I wanted to talk to.

The conversation was unanimously in favor of zero vendor bias, but still had strong opinions about Microsoft—none of them political. While enticing, .NET still has many questions to answer before this wary bunch would even consider it to be addressing open standards. C# in particular was a scary topic as no one (not even me) could figure out why Microsoft would say "open standards" on one side and then bring out a Web development language all its own on the other, regardless of its proposed benefits. Whether C# is offered as open through ECMA or not is almost moot; it's still a Redmond pet with all the strings that entails. To make C# viable, Microsoft really needs to market to those who are once bitten and now twice shy, and that is going to take a whole lot of work.

And while Microsoft is making lots of promises with .NET, the products they're delivering outside this umbrella still seem to follow the old routine. FrontPage 2002 is a perfect example; this puppy is more tightly integrated into Office XP on the front end and FrontPage server extensions on the back than ever. Indeed, Microsoft has upped the ante on the back end by adding SharePoint extensions and bCentral e-commerce services as well. Everything on this menu requires an end-to-end Microsoft solution. In some cases this *still* extends as far as the browser, though thankfully that requirement's dropping.

Over the second round of suds, however, most of these guys admitted to using FrontPage 2000. Not for production Web development, but for quick chores. They're all developing for Unix-based sites, but they're doing so from offices that have standardized on Windows 2000. Chores like slapping together intranets, tying together virtual teams, posting development and testing news, building application screen shots for presentations and documents—all these tedious tasks can be quickly and easily addressed using FrontPage.

Java enthusiasts may cringe, but from the coding manager's perspective this makes perfect sense. The infrastructure is all there anyway, and FrontPage makes exploiting these resources quick, easy and professional. It's the right tool from the toolbox—for internal chores. But Microsoft wants to extend that kind of ubiquity to the Web and e-commerce as well as the desktop. Buy a few brews for your local code snob contingent and you're likely to hear the same verdict I did on that score: Extreme pessimism. Microsoft needs to deliver not only quality technology going forward but a whole new kind of marketing effort as well. ▮

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CAUTIONARY TALE

◂ continued from page 44

data and testing to validate results on a platform different from the one on which the application was developed. This testing is important even as the application is migrated to newer versions of the operating system or to a newer generation chip.

The introduction of integrated development environments and other software tools has improved developer productivity, but the development of a sophisticated analytical application still requires a major investment of time and money.

To protect this investment against the effects of loss of precision, nonrobust behavior and cross-platform inconsistencies, have a healthy skepticism. Whether using internally developed algorithms or those from others, you need to understand the algorithm and its implementation; develop validation methods; document the code; and test, test, test. With the financial and other decisions riding on the results of today's analytical applications, it pays more than ever to use good practices in development. ▮

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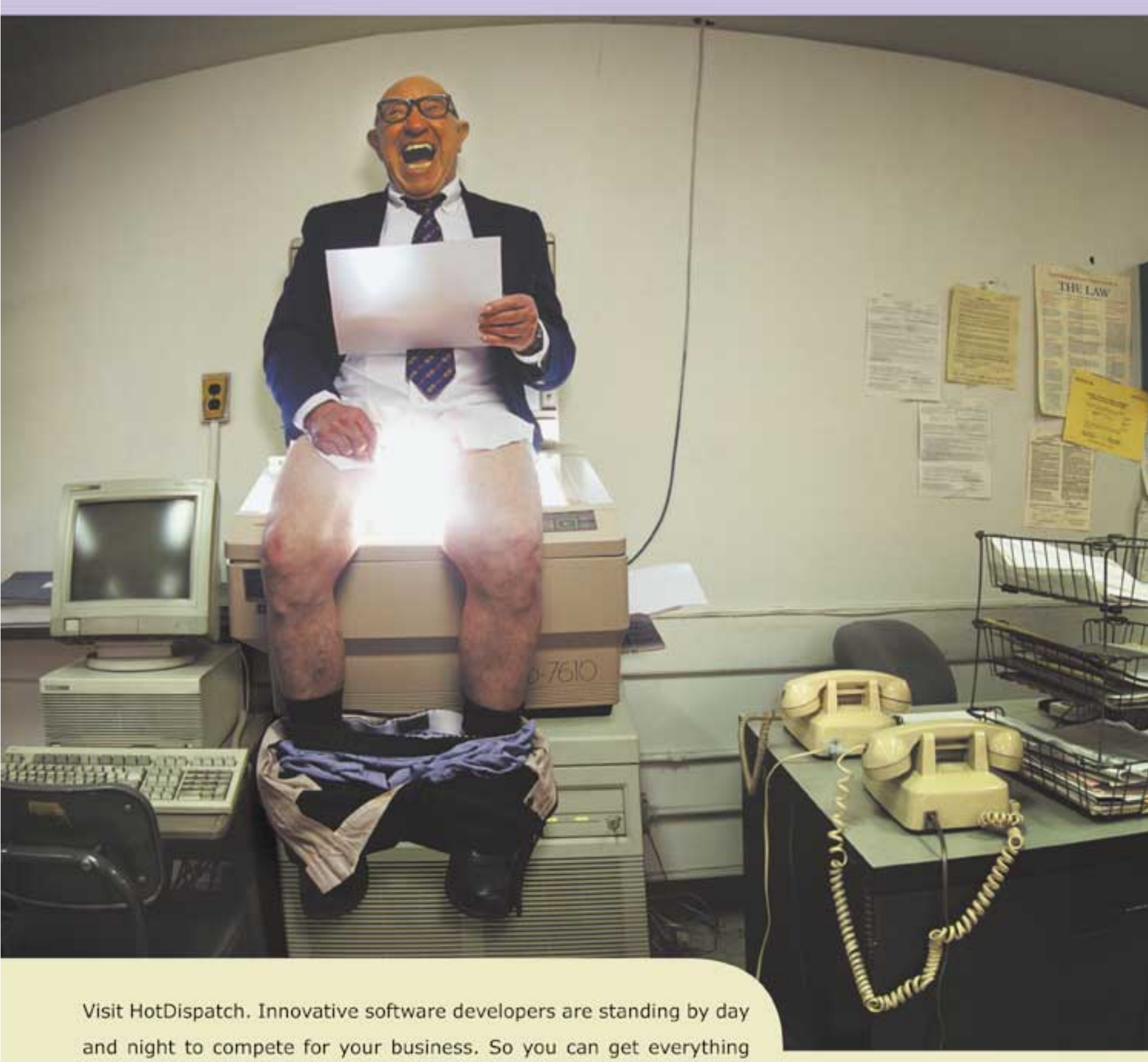

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JAVA: AND FOR MY NEXT ACT...

MIDDLEWARE WATCH

ANDREW BINSTOCK

Once upon a time, announcing far-off dates for product rollouts was widely considered to be a bad thing. In 1982, when Adam Osborne announced the months-away date for the next version of the Osborne portable computer, he killed sales of his current product. Customers wanted the new product and weren't willing to mark time by buying the current models. So dire was the drop in sales that Osborne Computer Corp. literally withered. By the time the new model was ready, the company was already shaking its death rattle.

Today, vendors are more skilled at presenting product plans without affecting sales of current products. In fact, the pendulum has swung the other way: to the need for articulating long-range product plans to make any sale at all. The absence of a long-term vision can be devastating.

When Computer Associates bought the Clipper database, you recall, only vague representations about its future were announced. Clipper died immediately. More compelling was Borland's acquisition of Ashton-Tate. Do you remember the famous muddle about how this purchase fit with Borland's existing database, Paradox? Nobody from Borland could distinguish the product lines or a path for integration. Both products died.

The rule is fundamental: Without vision, product lines whither. Microsoft has always understood this profoundly well. When IBM was touting OS/2's ability to run 16-bit Windows apps natively, Microsoft was busy talking about Win32. And not just Win32. There was Win32s (Win32 running atop Win16) and Win32g (the 32-bit graphics engine), which were both subsets of the mother of all operating-system APIs, Win32. So which operating system were you going to buy? The one that could do all of Win16 and had no other stated vision, or the Win32 dream of ever-expanding capability? Yup, me too.

A company that has taken a page from Microsoft and executed remarkably well is Sun's JavaSoft subsidiary. When it rolled out Java, it talked about Web programming. Then it moved to "write once, run anywhere." Then JavaSoft shifted to the server side. We went from applets to beans, to app servers, to punishing Microsoft, to even embedded programming (J2ME). Dang! Keeping up with all the different things Java promised to be was full-time work. Sun's vision went in so many directions that even Cerberus would have been jealous.

And then…kerplunk. It all stopped. For months now, nothing of note from Sun's JavaSoft division. Nothing. No J3EE. No Swing thing. No vision. Nothing.

What's going on? A slowing of announcements had to be expected. No company can maintain the quantity of new technology advances that JavaSoft delivered during the past 24 months. Even if it could, the market needs time to digest the technologies already shipped. This explanation, however, does not address why the number of meaningful announcements has dropped to zero.

The big goose egg is attributable to Sun's surprise at where Java has recently caught fire: in the embedded space. This year's JavaOne conference was filled with companies demonstrating smart devices using Java 2 Micro Edition: smart cards, smart phones, smart devices. J2ME is hot. And this isn't where Sun wants to be.

Sun sells servers and, to a lesser extent, workstations. Sun's SPARC architecture does have an embedded market, but this is a trivial revenue stream, which Sun has never pursued with any vigor. Sun doesn't do embedded. So confronted with a market of absolutely no strategic value, JavaSoft is caught flat-footed. What to do? What to announce? What exactly is the vision here?

On the enterprise side, Sun is suffering from a different problem. Despite the success of Java, Sun makes no money off the language or the platform. At a time of economic contraction, Sun has to examine its dollar commitment to Java. Many analysts argue that Sun's great run during the past two years was largely due to the dot-com phenomenon, the neglect of Unix server product lines by Hewlett-Packard and IBM, and the inability of Intel servers to compete. However, HP and IBM have become considerably more serious as sales have been squeezed, and the June release of the Itanium processor means Intel servers will start aggressively eating away at Sun's market share. Suddenly, analysts are downgrading Sun's prospects, and Sun itself is revising estimates downward.

In this environment, how much can Sun, a hardware company, invest in a software product line, which though wildly successful, makes no profit? By no means do I want to imply Sun will be withdrawing its support from Java. Such is not the case. However, you can expect a prolonged diminution in the number of new Java initiatives.

The real shame is that this leaves Sun silent as Microsoft prepares to roll out .NET and C#, both of which are intended to parry J2EE and Java's success. ▮

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CLEANING THE EAZEL

OPEN SOURCE

J.D. HILDEBRAND

What journalists do, I have come to understand—even journalists who occupy tenuous bottom-rung positions on fortnightly industry trade publications like the one you hold (that is to say, even such wretches as yours truly)—is simply this: They turn facts into stories.

The world is full of facts. Events happen. Speeches are made, products launched, elections held, automobiles crashed, stock prices revised, hemline lengths altered, baseball games won and lost. Facts are omnipresent. Facts are cheap. I suppose before there were journalists, people just wandered about in the world, observed events and took them for the news. It must have been a difficult life in the days before there were reporters to tell people which facts merited attention and what to think about them.

Journalists do not merely convey facts to readers, but select for conveyance certain facts. And they structure those facts into tales that make it clear what the facts mean and why they are important. Facts by themselves mean little or nothing. It is within the context of a story—a narrative—that facts become significant, relevant and memorable.

Sometimes the facts are incidental. It is often the case that a journalist—not yours truly, of course, but a scribbler of the lower orders—mentally composes a rantlet or minor observation that would be just the thing to fit the day's quota of verbiage. And yet... in the news business, one cannot simply offer observations and opinions. Especially when one is employed as a mere reporter or columnist, and not as an editor with ex officio access to the opinion pages. One must find an excuse: a current event that illustrates a trend or highlights a problem.

Such an event is known in the trade as a news "hook" or "peg." The idea is that the event is a little bit of news upon which the reporter can hang the story.

For example, a Microsoft announcement regarding planned language extensions for Visual C++ could serve as the news peg for a "thought piece" (that is, a navel-gazing essay containing little more than the author's opinion) about language standardization. The announcement that a certain trade show has been canceled might serve as the news hook for a trend story about the conference industry's vulnerability to competition from online information sources.

You see how easy it is?

Journalists tend always to have opinion pieces at the ready. So we spend much of our time sitting around waiting for events that can serve as news hooks and relieve us of responsibility for a day of serious reportage.

That, I surmise, is what happened a few weeks ago when Eazel pulled the plug.

You remember Eazel. It's the company—famously including Macintosh design-team veterans among its founders—that developed the Nautilus file manager and user interface for Linux.

Nautilus is an open-source project intended to make Linux a stronger competitor to Windows on the desktop. When Eazel failed, journalists quickly recognized that they had an opportunity to trot out their essays questioning the viability of desktop Linux. The pundits waxed unanimously pessimistic about Linux's chances of displacing Windows on corporate desktops. It would be easy to conclude, based upon the articles, that Eazel was all that stood between Microsoft's Windows team and world domination.

As convenient as Eazel's demise was as a news hook, however, the event does little or nothing to shed light on Linux's future. The hook turns out to be insufficiently strong to support the story.

Eazel closed up shop because it failed to find a business model that would support its continued development of an open-source product it was bound to give away. The death of the company does not mean the death of the product. Because Nautilus is an open-source project, it continues to enjoy sustained development and safe deployment. That's one of the benefits of open-source software—technology's fate is not bound up with the success or failure of a single company or individual.

Nor does Eazel's death serve as a sufficient news peg for the other story making the rounds, the one calling into question the viability of open-source software now that the high-tech world's former stock-option giddiness has hardened into cold reality. OK, Eazel didn't make it. But most of the companies building, deploying and relying on open-source software aren't in the software business. Their bottom lines don't have anything to do with free software—to them, software is about making business processes more efficient and enabling staff members to work smarter. Open-source software still works great at that, whether or not Eazel can pay the rent on its office space.

The end of Eazel is a real event and may be bona fide news. But it turns out to be an insufficiently strong hook to support the stories so many reporters have attempted to hang on it. ▮

J.D. Hildebrand is the former editor of such publications as Computer Language, Unix Review and Windows Tech Journal. Reach him at jdh@sdtimes.com.

SUN BEAMS, PARTNERS BURN

Last month's JavaOne seemed to have it all. Attendance held at last year's level of about 20,000, which in this economic climate is no small feat. More than 150 vendors were on hand to display their latest implementations of Java platforms and tools. Talk of Web services and Java-enabled devices filled the air. Classes and keynotes drew large crowds of developers looking to fine-tune their skills.

There was, however, one glaring omission: energy. The thrill of feeling like you're in on something special and the evangelical zeal of believing in a new paradigm were decidedly lacking. Indeed, even more than a lack of positive energy, there was an undercurrent of discord—with the delay in the EJB 2.0 specification, with the blossoming footprint of J2ME, with licensing issues, and with Sun itself for a perceived lack of support of third-party vendors.

MONEY WATCH

DAVID RUBINSTEIN

While Sun executives were busy citing the growing number of J2EE and J2ME licensees, several of its partners took the opportunity to grouse about the current state of Java affairs.

Much of the Java market grew out of the fact that "write once, run anywhere" gave companies an alternative to Microsoft and its Windows-only technologies. Microsoft offered only a top-down view of the application-development world; Java apparently sprang up from a groundswell. Now, those same partners are starting to voice their concern that Java is turning into a top-down model. Sure, it's from the Java Community Process board and not Sun directly—but don't forget that Sun provides tremendous resources, sets a direction and holds ultimate veto power.

Much of the discontent comes back to open standards and licensing. Several vendors that do not license technology from Sun said they were visited by what one termed "the licensing police," Sun representatives who apparently were making licensing offers that third parties couldn't refuse.

Despite the efforts of the Java Community Process, which has moved the platform forward with third parties providing much input and development, no one buys into the notion that Java is open. Any enhancements to the platform must be turned back to Sun for approval, and then relicensed by the creator.

Sun can try to spin this however it wants, but make no mistake. Java is a proprietary language, and represents a proprietary, monolithic model. As businesses move toward creating more flexible frameworks for Web services, the monolithic approach will not work for them. "I don't think Sun understands the evolution in the marketplace," said Rod Smith, IBM's vice president of Internet technology. "It's loosely coupled; companies need to be able to pick and choose. They don't want a deployment platform pushed on them. It's a completely different game."

"Web services will destabilize the rigid, vendor-driven architectures," said Ron Palmieri, vice president of business development at Grand Central, a new Web services infrastructure provider. "Standards leadership is critical."

More grumbling was heard about the evolution of the Java platform. Some third parties believe the API set is growing too large; others believe the platform is evolving too quickly. Still others found Sun's rules about the use of J2EE restrictive.

SMALL-MINDED

A problem for licensees wishing to use only a part of the burgeoning API set, though, is that they claim they cannot get certification from Sun if they do not implement the entire platform's APIs. This issue will be joined most fiercely in the embedded space, where vendors cite the ease of customization of embedded Linux—run the kernel, use the APIs necessary, and go.

In fact, one of the busiest booths at JavaOne was PreEmptive Solutions Inc., which released an embedded edition of its Java code minimization tool for reducing the footprint of J2ME applications.

The speed with which the platform is evolving was also nettlesome to some. "Let's not rush it. There is trouble with one-year releases, let alone six months," said SilverStream CEO David Litwack. "Let's just mature what we've got."

David Young, founding president at Lutris Technologies, said his company is focusing on making the platform more flexible by building its products based on what he called a services architecture. The company's EAS kernel sits atop a JVM and allows Java APIs to be implemented as plug-ins—"basically, all the things you're not allowed to do with J2EE," he said.

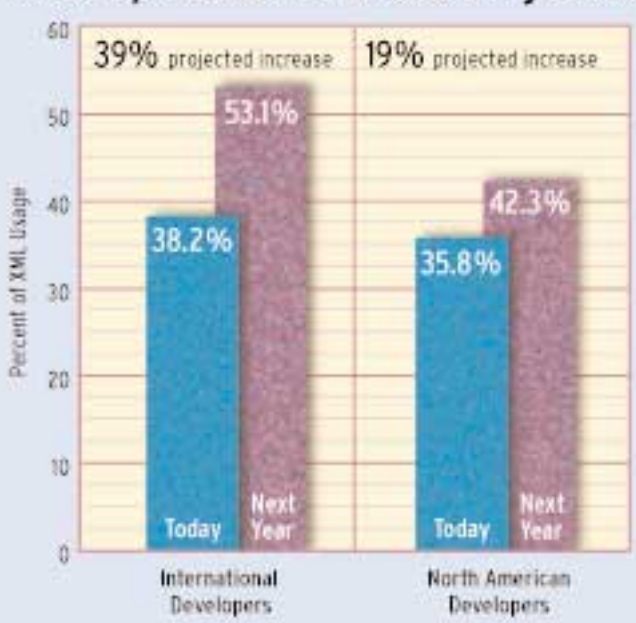
To be sure, Sun has its strong supporters who believe the evolution of the platform has been timely and are not put off by its size. "Yes, the J2EE spec is big, but what people are trying to do with it is big," said Michael Smith, principal evangelist of BEA's e-commerce division. "That's a good problem to have."

Maybe vendors are surly because of the slowdown in the industry. Maybe issues that Sun thought it had worked out with its partners need to be revisited. But it is clear that as Java evolves as a platform for use within companies and beyond, all is not well in the house of Sun. ▮

David Rubinstein is executive editor of SD Times.

Developers' Current and Projected XML Usage

EVANS DATA WATCH



Use of XML internationally has outpaced its adoption in America, according to a May survey, but developers at home and abroad say they will work with the language more this year than they did last year.

Overseas, more than 53 percent of developers surveyed say they will use XML in projects next year, while only 38.2 percent say they used it this year. In North America, slightly more than 42 percent of developers said they will use XML next year, compared with 35.8 percent who said they worked with XML this year.

Sources: International Developer Survey, May 2001; North American Developer Survey, April 2001; Evans Data Corp.

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BUSINESS BRIEFS

ProSyst AG, the Germany-based provider of service gateway software, has decided to cease its U.S. marketing operations and close its only American office in Atlanta. ProSyst will continue to provide technical support for its customers from its headquarters in Cologne . . . Information-delivery software maker **Acutate Corp.** has acquired **Tidestone Technologies Inc.** for 870,000 shares of stock, or approximately $12 million. Tidestone is best known for Formula One for Java, a server-based spreadsheet and database report generator. With the acquisition, the "Tidestone" name disappears . . . **Merant International Ltd.** has agreed to sell its legacy development and integration business to private equity firms **Golden Gate Capital** and **Parallax Capital Partners** for $62.5 million in cash, marking the end of Merant's ill-fated Egility e-business platform strategy, the companies announced. "Egility was designed as a one-stop solution and the market didn't want it," said Brian Reed, Merant's vice president of product management. Golden Gate will do the acquisition through a new company called **Micro Focus International Ltd.**; Tony Hill, senior vice president of Merant's legacy development and integration business, will head Micro Focus . . . **Everypath Inc.**, a provider of mobile application platforms, has acquired **Sitraka Inc.**'s Mobility Division. The amount of the deal was undisclosed. "This allows us to focus back on software," said Jeff Zado, product manager for Sitraka's JProbe line.

CALENDAR OF EVENTS

Embedded Systems Conference July 9–12
Chicago
CMP MEDIA LLC
www.esconline.com/chicago

Telelogic Americas' User Group Conference July 12–14
San Antonio
TELELOGIC
www2.telelogic.com/usergroup/us2001

Macworld Conference & Expo July 17–20
New York
IDG WORLD EXPO
www.macworldexpo.com

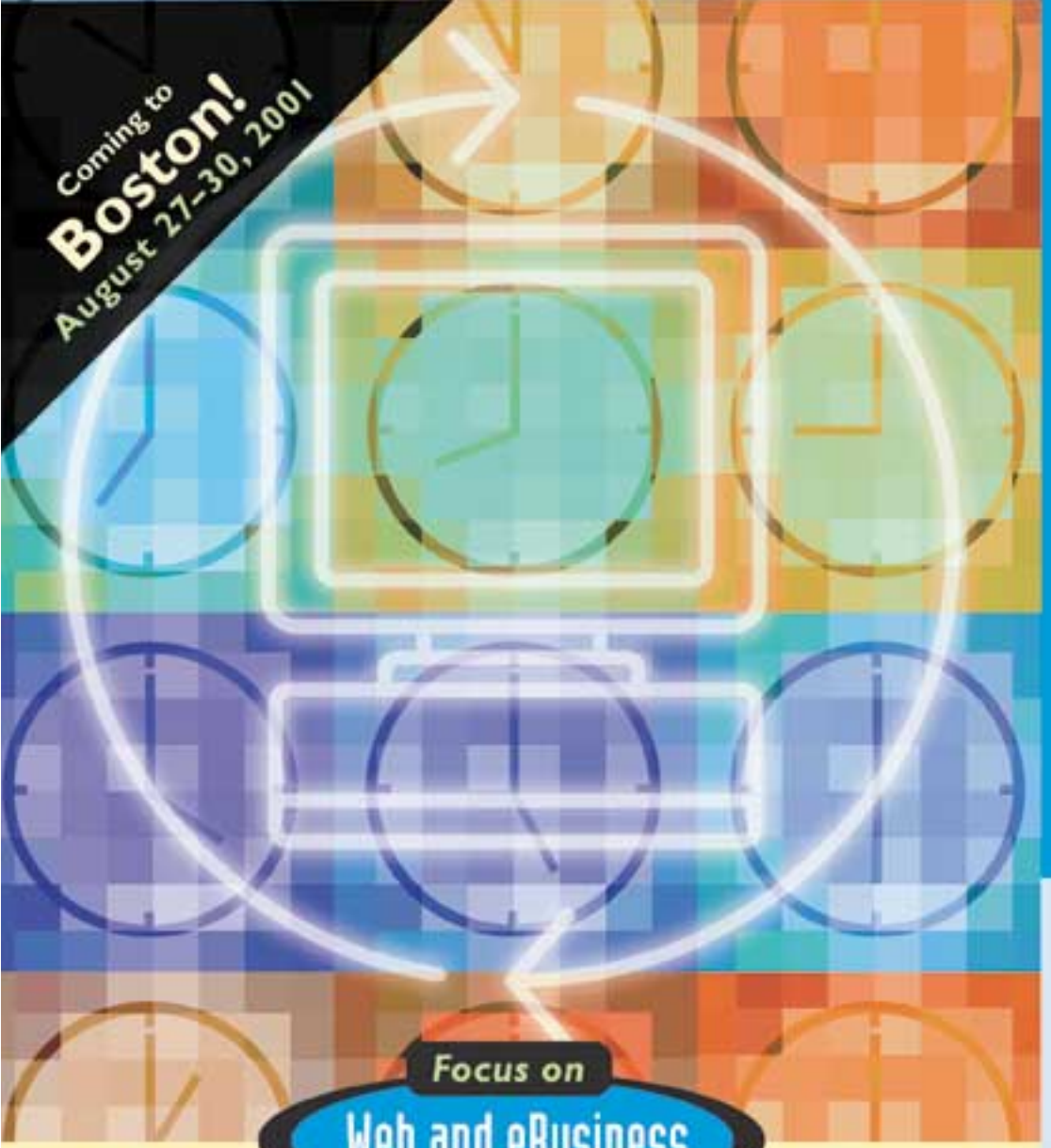
Borland Conference July 21–25
Long Beach, Calif.
BORLAND SOFTWARE CORP.
www.borland.com/conf2001

Wireless DevCon July 22–24
New York
CAMELOT COMMUNICATIONS CORP.
www.wirelessdevcon2001.com

Rational User Conference July 22–26
Denver
RATIONAL SOFTWARE CORP.
www.rational.com/events/ruc

Conference.NET Aug. 13–15
San Francisco
DEVELOPMENTOR INC.
www.develop.com/conferences/dotnet

Information is subject to change. Send news about upcoming events to events@sdtimes.com.



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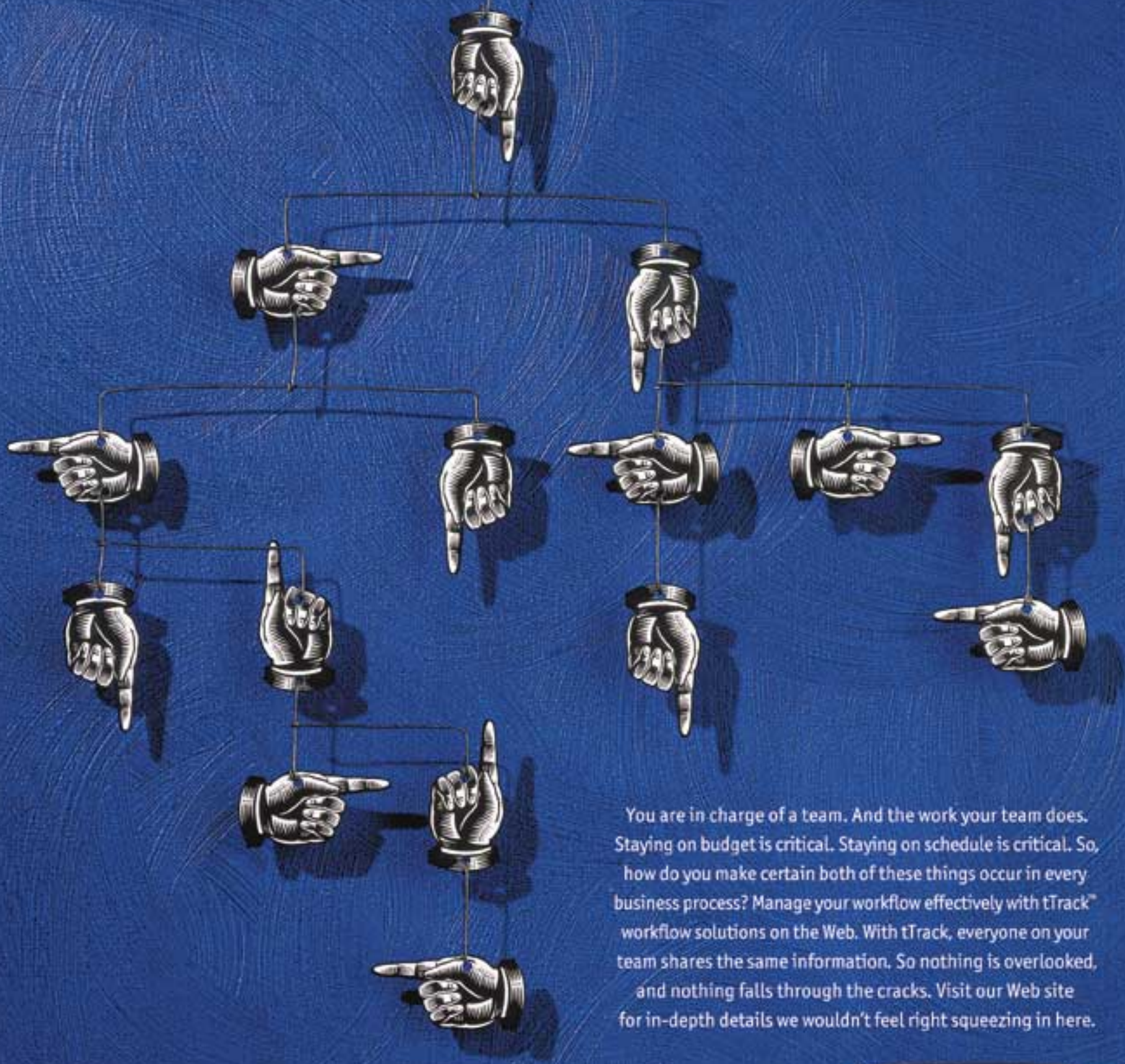

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